

OUTLINES OF ECONOMICS
PART I

THERE IS NO WEALTH BUT LIFE:
Life, including all its powers of love, of joy,
and of admiration. That country is the
richest which nourishes the greatest number
of noble and happy human beings—John
Ruskin, *Unto This Last*.

OUTLINES OF ECONOMICS

PART I

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NINTH EDITION REVISED

SEN, RAY & CO.
BOOK-SELLERS AND PUBLISHERS

15, College Square, Calcutta

1932

Published by the
AUTHOR
Rashbehari Avenue, Calcutta.

Price— { *Part I. Rs. 3/4*
Part II. Rs. 3/4

Printer : P. C. RAY,
SRI GOURANGA PRESS,
71/1, Mirzapur Street, Calcutta.

PREFACE

TO

THE NINTH EDITION

The book is intended chiefly for students reading the Economics course for the B.A. degree of Indian Universities—also for the general reader. The illustrations are from Indian conditions with such references to economic conditions in other parts of the world as no student of Economics can afford to neglect.

Indian Universities follow too exclusively Marshall and the Cambridge tradition. Alfred Marshall did great work in his generation. The Cambridge tradition in the hands of Pigou and other successors of Marshall has yielded notable contributions. For pedagogic purposes the Marshallian doctrine has high value and has been substantially followed in many parts of this book. But whether it approximates sufficiently closely to the economic realities in modern countries is seriously questioned by some competent economists. The student—the earnest student specially—should be always encouraged to be himself, to think for himself being brought in touch with different viewpoints and thus broadening his economic outlook. So I have come to the conclusion that it is not the right thing even in a book for beginners like this to omit all reference to the stimulating work of Hobson and some of Cannan's valuable discussions in England and the interesting, important, fruitful standpoint of Veblen and Mitchell, the leaders of the influential school of "institutional economics" in the United States of America. In this I have deviated from the practice of most text-books in use in our country.

Economics loses all savour and usefulness when it loses contact with current economic problems. Part I of the book considers among other things the questions of Rationalisation, Optimum Population and the present-day trend as regards world-population. Part II in addition to the usual text-book material will contain short discussions of the abandonment of the international gold standard, changes in banking theory and practice, war debts, reparations, the growth of economic nationalism and tariffs and the World Economic Depression.

M. SEN.

Calcutta, December 13, 1932.

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OUTLINES OF ECONOMICS

INTRODUCTION.

CHAPTER I.

Not so long ago, Economics* was a subject much maligned and much misunderstood. Carlyle called it the Gospel of Mammonism. It was the Dismal Science. And Ruskin, a devoted admirer of Carlyle, a man whom he regarded as 'the friend and guide who has urged me to all chief labour' was as emphatic in his condemnation as his great master. Economics is now somewhat better appreciated. Yet even to-day, the average citizen of a modern state, a man who generally knows something of Art and Literature, has often the most curiously wrong-headed notions about Economic Science ; indeed in many cases he has a strong lurking suspicion that Economics is the science of the selfish pursuit of wealth by individuals, that economists are a selfish lot of people, that they teach nothing but the merest gospel of selfishness. This is far from the truth.

Economics or Political Economy or Social Economics?

* Political Economy is derived from three Greek words, and it means the law of household management applied to communities. For the sake of brevity, it is very often called Economics.

The term '*Economics*' is briefer, more convenient than 'political Economy,' and its suffix '*ics*' (as in *Physics*, *Mathematics* etc.) may be regarded as emphasising the scientific character of modern Economics. Also to Aristotle in ancient Greece, Political Economy is the art of providing a revenue for the state; even in the Middle Ages of Europe Political Economy is the art of making a people wealthy and powerful to an important extent through state activities and in the interest of the state, as the revenue of the state depends upon the revenue of the people—and the expression '*Political Economy*' thus stressing political interests and political causes may be regarded as somewhat inexact and inaccurate as applied to modern economic thought which pays more attention to the actions of individuals and of social causes in connection with national economic life than to political causes. So Professor Clarke, Professor Seligman and others suggest '*Social Economics*' as a suitable name for our science. And Prof. Cassel chooses to call it "*Social Economy*".

And what is the truth? What is the real truth about the subject-matter of Economic Science?

What is Economics? A definition.

(Economics treats of Man and Wealth, man's activities in relation to wealth, mainly from the social standpoint and as affecting the welfare of Man in society. In modern Economics Wealth is important, but it is less important than Man and his Welfare.) Wealth is only the means and the welfare of men in society is the end—(wealth is important so far as it promotes social welfare.

As regards man's actions in relation to wealth, human wants are studied, and human efforts to satisfy wants, and the satisfaction of wants. Economics discusses the wants of man, and the consumption (or use) of wealth (commodities and services) by which these wants are satisfied; it studies the production of wealth by human effort and the exchange of wealth within a community, and its distribution or sharing among the different classes which help to produce the wealth.

Economics is primarily a social science, the social science of business. Economists consider the problems of production of wealth, its distribution, exchange and consumption primarily, from the point of view of society and its welfare rather than from the point of view of the individual. The subject-matter of Economics is thus not wealth in itself, but wealth as affecting the welfare of man in society.) (What wealth is—we have all a rough idea of it—is fully considered in Chapter V of the *Introduction*).

Our own Hindu writers on Economics in ancient India—the Hindus had highly developed economic and political sciences, in many respects more developed than those of ancient Greece and Rome—gave full (and sometimes even exaggerated) recognition to wealth and its science for the welfare of Man and of Society. Kautilya,* the great Indian contemporary of Aristotle, declared "Virtue and enjoyment are rooted in wealth", and Sukra insisted "It is through wealth alone that men get virtue, satisfaction and salvation."

* Kautilya—*Arthashastra*.

The supreme importance of Man (and human welfare) in the study of Economics is fully recognised by all recent writers.

Definitions of Economics.

I. Some modern definitions.

The statement and examination of some definitions of Economics by leading modern writers like Marshall, Ely and Gide and others make the nature of the subject quite clear.

Roscher, the great German founder of the modern historical school of economists, begins his survey of the science with the memorable remark "*the starting-point and goal of our science is man.*"

(i) Marshall's definition.*

Prof. Marshall, the doyen of English economists of the present generation, gives the following definition :

(Political Economy, or Economics, is a study of man's actions in the ordinary business of life ; it inquires how he gets his income and how he uses it.)* It follows the action of individuals and of nations as they seek, by separate or collective endeavour to increase the material means of their well-being and to turn their resources to the best account. *(Thus it is on the one side a study of wealth, and on the other, and more important side a part of the study of man. For man's character has been moulded by everyday work, and by the material resources which he thereby procures,)* more than by any other influence unless it be that of his religious ideals."

Marshall thus brings out that the aspect of Economics, which is a part of the study of man, is more important than the aspect which deals with wealth.

(ii) Gide's definition.

Let us take the definition of an illustrious French economist, Prof. Gide. "Of all the relations which exist between human beings living in society, Political Economy deals with those alone which tend to the satisfaction of their material wants, with all that concerns their *well-being.*" So according

* "*Economic activities, rather than economic goods form the subject-matter of the Science*" (Carver—*The Distribution of Wealth*).

to Prof. Gide, *Political Economy treats of wealth and of Man's social activities and social welfare in connection with wealth.* The stress is laid upon *Man and his well-being (welfare).*

(iii) Ely's definition.

Prof. Ely, a distinguished American writer, thus defines Economics :

"Economics is the science which treats of those social phenomena that are due to the wealth-getting and wealth-using activities of man." Economics treats of wealth ; and of Man's activities in connection with wealth. Economics treats of man's welfare, studying man not simply as a producer of wealth, but as one for whose benefit all wealth is produced. The subject-matter of economic study is not simply one particular class of men, the employing class, but all classes ; and the increase of wealth of the employing class at the expense of the health and happiness of the labouring class is extremely undesirable. Economics is a social science and treats of Man in society, it studies man not by himself but in his business relations to other men living in society. Economics also studies man in the process of development.

(iv) Fisher's definition.

Another first-rate American economist, Prof. Irving Fisher, gives the following definition of Economics :

"It is worth emphasizing at the outset, that the chief purpose of economics is to set forth the relations of wealth to human life and welfare. It is not, however, within the province of Economics to study all aspects of human life and welfare, but only such as are connected in some rather direct manner with wealth."

(v) Wesley C. Mitchell's standpoint.

Thorstein Veblen is the founder of what has come to be called in the United States "institutional economics." Veblen is dead and Wesley C. Mitchell is the chief leader to-day of the school of "institutional economics" which includes a considerable proportion of the more capable younger American economists. Mitchell emphasizes strongly the connection between economics and human welfare. "Whether

economics is to us a subject of thrilling interests or a dismal pseudo-science depends upon ourselves. . . . But if we come thinking of man's long struggle to master his own fate, then the effort to solve economic problems seems a vital episode in human history, a hopeful portent for the future. Seen in this perspective economic speculation represents a stage in the growth of mind at which man's effort to understand and control nature becomes an effort to understand and control himself and his society. The future of economics, the question whether men will ever succeed in establishing a serviceable science of human behavior becomes one of the crucial issues on which hangs the doubtful fate of humankind." (W. C. Mitchell, "The Prospects of Economics," in *The Trend of Economics*, 1924, p. 3).

Wealth is made for man, not man for wealth.

**And Economics is a social science studying Man as a social being and social welfare as affected by wealth.*

II. Earlier definitions criticised.

Now we are in a position to criticise the somewhat one-sided definitions of some earlier writers.

†*Earlier writers made Economics the science of wealth ; they thus made the mistake of somewhat neglecting the more important side of economics, viz., the study of man and his welfare in relation to wealth.* Wealth is important only because it satisfies the wants of man ; wealth is only the means and the welfare of man is the end.

(Definitions of Political Economy are plentiful, and many are not satisfactory. Some are too wide ; they make Political Economy a theory of civilisation, they identify it with social science in general and thus attribute too wide a field to it. Some are too narrow ; they make Economics merely a theory of exchange, commerce, value, subjects which occupy only a portion of the whole field of economics. For some of these definitions see Cossa's *Introduction to the Study of Political Economy*, Theoretical Part, Ch. V).

* Professor Suranyi-Unger in his *Economics in the Twentieth Century* (edited by Prof. Seligman), 1931, pages 263 and 264, describes the increasing importance of the welfare idea and the gradual retreat of the whole value theory in Anglo-Saxon Economics.

† J. B. Say (1803) in his influential treatise defines Political Economy simply as "the science which treats of wealth." So also many early English writers.

Economics is not the Gospel of Mammon.

The excessive importance attached to the mere production of wealth, and the apparent neglect of human welfare in the writings of some *early English Economists*, gave Economics a very bad reputation with some of the greatest literary figures of the 19th century. It was regarded as a selfish science written by selfish people; and its sole object was supposed to be the selfish increase of wealth of the rich capitalists and employers, etc., even at the expense of untold sufferings of the labourers and their women and children. Thomas Carlyle, the censor of the age, Ruskin, and some of the great Victorian novelists, more specially Dickens, attacked vigorously Economics and economists from the moral point of view. Their criticisms being often based on insufficient knowledge of the science were largely erroneous; but they did very valuable work in emphasizing the importance of human welfare.

Good typical examples of nineteenth-century attacks on Economics and economists are to be found in Carlyle's *Past and Present* (Book III), Ruskin's *Unto This Last*, *Munera Pulveris*, Dickens' *Hard Times*, etc., etc.

It has been already seen that the *modern conception of economic science pays full attention to the study of man and his welfare in society; and so Economics can no longer be justly condemned as the Gospel of Mammon, as the science of the selfish pursuit of wealth.*

***Importance and usefulness of Economic Studies.**

The study of Economics is useful in many ways, and most of all in helping to solve some of the greatest social problems of the day.

* Even modern Economics is not without its trenchant critics—and of different schools. A vigorous pronouncement on this subject by a notable English thinker is given below.

"Economic Science has been raised to a very high level of tortuous abstraction by the industry of its professors.....From its beginning the earthly study of Economics has been infertile and unhelpful because of the mass of unanalysed and scarcely suspected assumptions upon which it rested. The facts were ignored that trade is a bye-product and not an essential factor in social life, that property is a plastic and fluctuating convention, that value is capable of impersonal treatment only in the case of the most generalised requirements. Wealth was measured by the standards of exchange. Society was regarded as a practically unlimited number of avaricious adult units incapable of any other subordinate groupings than business partnerships, and the sources of competition were assumed to be inexhaustible. Our liberation from these false presumptions through the rhetoric of Carlyle and Ruskin and the activities of the socialists is more apparent than real."

—H. G. Wells, *A Modern Utopia*.

The importance of Political Economy has a twofold aspect—(A) *theoretical*, (B) *practical*. It helps the progress of pure scientific truth, is an excellent mental discipline, and it has numerous and important practical advantages.

(A) Importance of Economics as theoretical knowledge and also as mental discipline.

From the point of view of pure knowledge, *Economics teaches us a large number of truths*—truths about Man in relation to wealth.

Also a knowledge of Economics should form a part of any scheme of broad and solid culture. As an instrument of mental culture, as an exercising ground for the mental faculties, Economics is inferior to no science and superior to a good many. Merely abstract studies like some of the mathematical sciences by dealing exclusively with abstractions tend to make the mind somewhat unpractical, and unable to grapple with concrete, living realities. Economics deals with the infinite complexity of concrete, living facts about human life and society in relation to wealth ; it has to observe these facts carefully, to analyse them with patience ; to attend to the immediate and often the more important remote cause or causes ; and thus it trains the mind in habits of careful observation, of patient analysis, and close and accurate reasoning.

The complexity of social life and human motives, and the concrete character of the science make Economics of the highest value in the cultivation and development of the mental faculties.

(B) Practical Advantages.*

The study of Economics has many and important practical advantages.

* . . . there will, I think, be general agreement, that in the sciences of human society, be their appeal as bearers of light never so high, it is the promise of fruit and not of light that chiefly merits our regard. . . . That is true of all social sciences, but especially true of Economics. For Economics "is a study of mankind in the ordinary business of life"; and it is not in the ordinary business of life that mankind is most interesting or inspiring. One who desired knowledge of man apart from the fruits of knowledge would seek it in the history

(1) Different branches of economic science (*e.g.*, Organization of Industry, the principles of Banking, Currency and International Trade, Taxation and National Expenditure, etc.) are of the greatest *practical service* to the manufacturer, the banker, the merchant and the statesman.

(2) For workmen too, a knowledge of Economics is highly useful. It teaches the labourer the mutual dependence of labour and capital, it teaches him to fight intelligently for his rights, when to strike and when not to strike, the claims of society upon him and the benefits of various forms of co-operation.

(3) *Economics helps us in solving grave social problems, e.g.,*

(i) The good and the evil of economic freedom, how the good is to be increased and evil diminished.

(ii) The problem as to the proper relations between individual and collective action in modern industry.

(iii) The problem as to proper methods of using wealth.

(iv) The problem as regards the more equal distribution of wealth, and of the burdens of taxation among the different classes of society.

(v) As Prof. Marshall remarks, broadly speaking "*the destruction of the poor is their poverty.*"* The physical and

of religious enthusiasm, of martyrdom, or of love; he would not seek it in the market-place. When we elect to watch the play of human motives that are ordinary—that are sometimes mean and dismal and ignoble—our impulse is not the philosopher's impulse, knowledge for the sake of knowledge, but rather the physiologist's, knowledge for the healing that knowledge may help to bring . . . Here, if in no other field, Comte's great phrase holds good: "It is for the heart to suggest our problems; it is for the intellect to solve them. . . . The only position for which the intellect is primarily adapted is to be the servant of the social sympathies" (Pigou—*The Economics of Welfare*, Chapter 1).

* The problem of poverty weighs heavily upon the modern social conscience. Mr. George Bernard Shaw, one of the keenest thinkers of the present generation, has put this very powerfully in his characteristic paradoxical manner.

'Now what does this Let Him Be Poor mean? It means let him be weak. Let him be ignorant. Let him become a nucleus of disease. Let him be a standing exhibition and example of ugliness and dirt. Let him have rickety children. Let him be cheap and let him drag his

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moral degradation of the poorest classes, and their want of culture are largely due to their poverty, though partly due to other causes as well) For classes of people who are somewhat better off, even for them their poverty is a great, a very serious evil ; they are poor, they are overworked, suffer physically from exhausting toil, and they have little or no leisure for intellectual and artistic culture.

(In the western world, specially in England and in the United States, the condition of the labouring classes has much improved, as the result of improved economic knowledge during the course of the nineteenth century. *And the chief and the highest practical interest of Economic Science lies in the fact that it will help us greatly in finding remedies for this stupendous problem of poverty* which is causing endless miseries to millions and millions of persons in every country of the world.

In India, the poverty problem exists in a very acute shape. The country is periodically devastated by famines. For Indians, the proper study of Economics is a vital question, one intimately connected with the very life and existence of the nation.

(vi) The world economic depression (1929—1932 and expected still to continue) has drawn the attention of peoples

fellows down to his price by selling himself to do their work. Let his habitations turn our cities into poisonous congeries of slums. Let his daughters infect our young men with the diseases of the streets and his sons revenge him by turning the nation's manhood into scrofula, cowardice, cruelty, hypocrisy, political imbecility, and all the other fruits of oppression and malnutrition.

(Preface to *Major Barbara*.)

Another extract from the drama itself :

"Cusins. Do you call poverty a crime?"

Undershaft. The worst of crimes. All the other crimes are virtues beside it; all the other dishonours are chivalry itself by comparison. Poverty blights whole cities; spreads horrible pestilences; strikes dead the very souls of all who come within sight, sound or smell of it. What you call crime is nothing; a murder here, and a theft there, a blow now and a curse then; what do they matter, they are only the accidents and illness of life; there are millions of poor people, abject people, dirty people, ill-fed, ill-clothed people. They poison us morally and physically; they kill the happiness of society; they force us to do away with our own liberties and to organise unnatural cruelties for fear they should rise against us and drag us down into their abyss. Only fools fear crime; we all fear poverty."

(Act III, *Major Barbara*.)

and governments of countries all over the world to the great practical importance of adequate economic studies. Prices of agricultural commodities, minerals, manufactured products, have fallen in all countries. Producers have suffered greatly. International trade has been dislocated. Millions of wage-earners are out of employment in every country. Currencies have been deranged. The international gold standard has been abandoned by most countries. Almost all governments have heavy budget deficits. All countries have suffered very grave hardships. Some of them due to serious economic maladjustment are on the verge of political revolution. (The world economic depression, its causes and some of the remedies suggested are considered in Vol. II of this book).

CHAPTER I.

Summary.

1. Economics is one of the social sciences.

It is the social science of business. It studies wealth and more important still, it is a part of the study of man and his social welfare.

Economics does not always assume, and it does not recommend the selfish pursuit of wealth.

2. Economic studies are helpful in many ways.

From the standpoint of pure knowledge, Economics teaches us a large number of important truths, truths about Wealth, Man and Society.

It is an extremely valuable instrument of mental culture. It is of immense practical service to the merchant, the manufacturer, the banker and the statesman and the workman.

Most important of all, Economics gives us great and much-needed help in solving many of the gravest social problems of the day.

Questions.

1. What is Economics?

Is it the Gospel of Mammon? Were Carlyle and Ruskin quite justified in their attacks on Economics and economists?

2. What is the more important thing in Economics—Wealth or Man?

3. Give your own considered opinion on the value of economic studies. Illustrate your answer by references to Indian conditions.
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CHAPTER II.

Scope. Economic Laws. Methods and Schools.**Scope of Economics.**

(To describe the Scope of Economics, we have to indicate the subject of our inquiry, viz., (i) *the kind of phenomena with which Economics deals*, and (ii) *the kind of knowledge that Economics seeks concerning these phenomena*.)

Before discussing the scope of Economics it is desirable to explain briefly *the terms 'Science' and 'Art.'* A Science is a systematized body of knowledge consisting of laws about a particular class of phenomena.

An Art is also a systematized body of knowledge ; but an art has always a practical end in view while a science has no such practical aim. A Science simply explains; an Art always prescribes rules for the attainment of a practical object. Navigation uses the knowledge of celestial phenomena for navigating ships, it has a practical object and is therefore an art: Astronomy tries to explain celestial phenomena and is therefore a science. (Arts are sometimes called practical sciences).

Sciences are (1) *positive*, taking the *facts* of the universe as they are, e.g., Physics, Chemistry, Botany, etc) (2) *normative*, dealing not with *facts* as they are but as they ought to be in the light of ideals or standards, e.g., Ethics is a normative science because it is the science of what conduct ought to be in the light of moral ideals.

(I) As regards the *Scope of Economics*, it has to be decided what kind of knowledge Economics gives, whether it is a Science or an Art or both.

The *phenomena* Economics deals with are man's actions in society in relation to wealth.

***Briefly speaking the scope of Economics includes the Science and the Art of Economics, a theoretical and also**

* Like many English economists, Prof. Pigou thinks that Economics is a science and not an art, but it is the type of science adapted to form

a practical branch) or more fully we may say that it includes (i) *a positive science of Economics, studying economic phenomena as they are*—what economic causes produce what economic effects (ii) *and the several arts of Political Economy*. A writer holding that voluntary action by individuals will improve considerably the quality of consumption in a country may frame an art of consumption and prescribe rules for the attainment of that practical end. Another art—the art of business—will prescribe rules to businessmen for the attainment of a practical end, viz., success in business. (An important art of Economics is that art which deals with a special department of governmental interference with the practical object of improving the social production of wealth, or its distribution, or its consumption, or some or all of them.

The arts of Economics are necessarily based on the science of Economics. The arts successfully realise their practical economic ends if they are founded on the scientific knowledge of economic causes producing economic effects.

Economics studies the economic conditions and problems of the present time, also of the past and to some extent of the future—“while it deals primarily with the present, cannot avert its glance from the past or from the future” (Seligman). The present is rooted in the past, it looks back to the past. And with its ideals of social perfectibility it cannot help looking forward to the future.

A brief sketch of the history of economic thought on the subject of the scope of Economics may be interesting and useful in this connection.

the basis of an art—“.....it follows that the type of science that the economist will endeavour to develop must be one adapted to form the basis of an art. It will not, indeed, itself be an art, or directly enunciate precepts of government. It is a positive science of what is and tends to be, not a normative science of what ought to be.there are two main types of positive science. On the one side are the sciences of Formal Logic and Pure Mathematics, whose function is to discover *implications*. On the other side are the realistic sciences, such as physics, chemistry, and biology, which are concerned with actualities it must be the realistic, and not the pure type of science that constitutes the object of our search. We shall endeavour to elucidate, not any generalised system of possible worlds, but the actual world of men and women as they are found in experience to be (Pigou—*The Economics of Welfare*, Chapter 1).

(1) *Steuart.*

Political Economy was at first conceived to be that *part of the art of government* in which the chief business of the statesman was supposed to be 'to provide everything necessary for supplying the wants of the society and its members, and to regulate the employment of the latter with a view to this end, due regard being had to the spirit, manners, habits and customs of the people and in a free country, to their constitutional rights and liberties.' This is the view taken by Sir J. Steuart in his treatise on *Political Economy* published in 1767.

(2) *Adam Smith.*

An important change in the scope of *Political Economy* was brought about before the end of the eighteenth century by the *Physiocrats* in France and by *Adam Smith* in Britain. Adam Smith still continued to regard *Political Economy* as *part of the art of government*; but he maintained in his famous book "*The Wealth of Nations*" that industry and trade flourished most when they were not interfered with by the government and statesman; and hence the *scope of Political Economy* came to be viewed "not as an investigation of the manner in which the statesman ought to regulate trade and industry but of the manner in which industry and trade would regulate themselves and would flourish if the statesman would only abstain from ill-advised meddling." Here we have the well-known economic doctrine of *laissez faire*. This view of *Political Economy* was also taken by the successors of Adam Smith, e.g., Ricardo, etc.

(3) *Senior, J. S. Mill and Cairnes.*

Later on N. W. Senior, a distinguished English economist, divided *Political Economy* into two great divisions: (1) the theoretical branch or science which explains the nature, production and distribution of wealth, (2) the practical branch or art which tried to find out what institutions are most favourable to the growth of wealth. And a few years afterwards he narrowed the *scope of Political Economy proper to the theoretical branch* of the subject; and he left the practical part of *Political Economy*, the art to be included within the general art of government, because this part of Economics depends not only on economic but also on ethical and political considerations. This view of the scope of *Political Economy*, (*viz., Economics is a science*) has been substantially adopted by J. S. Mill, Cairnes, and many of the English economists since Cairnes.

(II) **Marshall's view.***

(Prof. Marshall does not discuss whether Economics is a Science or an Art or both ; he rather examines what *kind of*

* Marshall's position is made quite plain in his lecture, *The Present Position of Economics* (1885) from which extracts are given below :

"The outward form of economic theory has been shaped by its connection with material wealth. But it is becoming clear that the true

phenomena, what kind of men, and what classes of human motives fall within the Scope of Economics. According to him, the *Scope of Economics* consists (i) in studying men as they live and move in the ordinary business of life, 'real men' and not unreal abstractions, 'economic men' (i.e., imaginary beings supposed to be guided only by low, selfish motives.) [These 'economic men' were created by the imagination of an earlier generation of economists. They were supposed to be influenced only by the selfish 'economic' motive of securing as much wealth as possible with as little effort as possible, and these 'economic men' were supposed to be not influenced by moral, political, religious or other motives. Such men did not exist in reality. Therefore the economic laws, based on them by the early English economists, often proved largely erroneous. Hence Marshall rejects 'economic men.' And he rightly makes the scope of Economics consist in studying 'real men' and not imaginary 'economic men'.]

philosophic *raison d'être* of the theory is that it supplies a machinery to aid us in reasoning about those motives of human action which are measurable. In the world in which we live, money, as representing general purchasing power, is so much the best measure of motives that no other can compete with it. But this is, so to speak, an accident, and perhaps an accident that is not found in other worlds than ours.

..... a misleading association has grown up in people's minds between that measurement of motives, which is the chief task of economic science, and an exclusive regard for material wealth, to the neglect of other and higher objects of desire.....

But, while attributing this high and transcendent universality to the central scheme of economic reasoning, we may not assign any universality to economic dogmas. For that part of economic doctrine, which alone can claim universality, has no dogmas. It is not a body of concrete truth, but an engine for the discovery of concrete truth. Similar to, say, the theory of mechanics.....

But, though in wording our economic organon this idea of measurability should be always present, it should not, I think, be prominent. For practical purposes, and in order to keep the better our touch of real life, it will be best to go on treating it as chiefly concerned with those motives to which a money-price can be directly or indirectly assigned. But motives that are selfish or self-regarding have no claim to more consideration than others except in so far as they may be more easily measurable and may more easily have a money-price assigned to them. This organon deals with the play of measurable motives for and against one another, balancing one another and being substituted for one another, though the persons concerned may be in classes or even in countries that have little direct intercourse. And it sets out that most

(ii) And in discussing real men, Economics 'concerns itself chiefly with those motives which affect, most powerfully and most steadily, man's conduct in the business part of his life'. Even in business, good men (merchants, manufacturers, labourers, etc.) are influenced by their high ideals, and their conceptions of duty (but the chief motives of business life can be measured largely in terms of money, the strongest motive to business work is the desire for pay which is the material reward of work (e.g., the greater the wages offered the greater will be the inducement to the labourer to work more carefully and for longer hours, etc.).

In measuring motives, we must make allowance for the fact that the same amount of money has a greater utility to the poor man than to the rich man.

complex play of human motives that changes the purchasing power of money, and thus alters the measure of all motives.

Lastly, taking account of the fact that the same 'sum of money' measures a greater pleasure for the poor than for the rich, it helps in determining the relations between the money gain that a nation gets from any given social or industrial change and the total increase of happiness arising from it."

Prof. Seligman on "the economic man" and the economic motive.

"The motive that guides men in their economic life is sometimes described as *the economic motive*. It may best be defined as the motive which impels every human being to satisfy his wants with the smallest possible effort, or which leads him to secure the most pleasure with the least pain. The existence of such a motive is undeniable; it is in fact of deep and abiding importance; it may even be declared the paramount consideration in the working out of economic law. We must, however, not forget that this is not the only influence at work in economic life. *Human beings are impelled by other motives as well*; and these other motives may often exert a perceptible influence in economic life. The study of economic history shows us that religious, political and ethical considerations have profoundly modified economic action itself..... In searching for the fundamental laws of economics, it is convenient to exclude all motives save the economic. Since the latter is the one of basic significance, and since it would otherwise be impossible to formulate economic theory in general terms. In applying the law to actual life, however, we must be careful to study how its operation is modified by the other—even though minor—motives which affect economic action.

If the "economic motive" is thus open to misconception as explaining the whole economic life, the so-called "economic man" is a complete abstraction. By the "economic man" is meant the human being dominated by the economic motive. Such a man, however, does not really exist.....

".....Although there is both an economic and a religious life, there is no economic man, just as there is no separable religious man" (Seligman—*Principles of Economics*).

As has been pointed out already, *the motives of man in business life are not exclusively selfish* and Economics does not regard money or material wealth as the main object of human effort or of study.* *The fact that motives in economics are largely measured in terms of money is due to the circumstance that money is the one convenient standard for measuring human motives on a large scale and it gives a degree of exactness to Economics which is not possessed by any other social science.* From this money measurement of motives in Economics, Economics has been sometimes called the '*science of measurable motives.*'

It is noteworthy that Marshall first reached Economics through Ethics. Fascinating inquiries into the possibilities of the higher and more rapid development of human faculties brought him into touch with the question: how far do the conditions of life of the British (and other) working-classes generally suffice for fulness of life? And Marshall's firm view is that† '*economic science is chiefly valuable neither as an intellectual gymnastic nor even as a means of winning truth for its own sake, but as a hand-maid of ethics and as a servant of practice.*'") Hence though a skilled mathematician, he used mathematics sparingly. He saw that excessive reliance on mathematics might lead us astray in pursuit of intellectual toys, imaginary problems not conforming to the conditions of real life. And "his conviction that the chief value of Economics was as a hand-maid to practice had another important effect upon Marshall's method. He endeavoured always to write in a way intelligible to men of affairs as well as to professed students of Economics."

III. Veblen's view.

"The classical tradition was to take institutions for granted and to reduce human nature to a matter of rational calculation. *Veblen insists on a realistic view of human nature so far as modern psychology throws light upon it, and on investigating the origin and nature of the institutions through which the economic side of the life process*

* "Economics does not assume that most people selfishly seek wealth. Nor does it advise them to do so. It simply takes people as they are and treats of the effect of their actions with reference to wealth."
(Chapman—*Elementary Economics*).

† Pigou—*Memorials of Alfred Marshall*.

functions. His work thus lies largely outside the recognized field of economic theory. . . . His plan is a genetic study of economic institutions, evolutionary in character and essential to a proper understanding of the economic life of our times.

The economic part of the life process of society is, in Veblen's view, that part of human activity which is concerned with coping with external nature to the end of providing for man's material wants. On this basis it is possible to set up a classification of human traits and institutions."—Paul T. Homan, *Contemporary Economic Thought*, 1928, pages 134-135.

Economics is a Science and has its Laws.

In discussing the Scope of Economics, it has been pointed out that *Economics, at least an important portion of it, is a Science*. And its methods of inquiry and generalisation are the methods of science. This question will be here a little more fully considered. *Economics is a Science because it 'consists of facts connected by certain necessary relations called laws.'* The title 'Science' given to it is not a mere honorary title.

Economics is a Science as much as the Physical Sciences.

(i) There are laws in Economics expressing necessary relations between facts, as there are laws in the Physical Sciences. The relations are necessary and *the laws hold true in Economics as in the Physical Sciences, only if certain previous conditions are fulfilled*. So we see that *Economic Laws are essentially hypothetical**—in this respect Economic Laws do not differ from Laws of other sciences which are also true under given conditions. Atoms of oxygen and hydrogen combine to form water only under certain conditions of temperature, pressure etc. Similarly economic laws are true under given economic conditions—for example, the law of monopoly price states how mono-

* ".....economic laws are essentially hypothetical. We must be quite sure that the premises are true to actual life before we can draw a conclusion applicable to existing facts. So far as the premises are only partially true, the conclusions are only partly valid. This does indeed not prove that there are no economic laws, but only that the law may not yet have been ascertained, or that the particular statement of the law in question is only provisional. In this respect economic law does not differ from any other scientific law". (Seligman—*Principles of Economics*).

polists will fix price under certain economic conditions and circumstances.

(ii) *The free will of men does not prevent Economics from being a Science.* The action of free agents (i.e., men) can be reduced to law. Though men (with their free will) are free to act as they like, they as rational beings always act from adequate motives and sufficient cause.* "*The uniformity in reason implies some uniformity in human affairs (i.e., law in human affairs).*" Men, in the aggregate, acting from similar motives, will act in a uniform way. Uniformity in the aggregate only is affirmed. *Averages are all that are necessary to establish economic laws.* What a particular individual will or will not do cannot be foretold by an economist—that is the province of a fortune-teller and not of an economist. The economist is concerned with *averages*—how men in the aggregate will act on an average under given economic conditions and from these averages, the economist will frame economic laws.

So Economics satisfies the tests of a science, rather it includes several sciences (and also a number of Arts).

[Comte regarded *prevision* (or prediction) as essential in a science. Prevision is possible in Economic Science. Arguing from the uniformity in human reason, it is possible to make economic predictions as to how men in the aggregate will act under given conditions, which are more accurate than are to be found in some of the inexact physical sciences, e.g., meteorology.]

Economics as a science is more exact than other social sciences ; but Economics is less exact than Physics, Astronomy and other simple natural sciences.

Of the social sciences, the two most systematized are Economics and Political Science, and Economics is more highly systematized and more exact than Political Science. *It is the exact money measurement of the motives of business life which makes the science of Economics more exact than the other social sciences.* "Just as the chemist's fine balance has made Chemistry more exact than most other physical sciences ; so

* Chapman—*Outlines of Political Economy.*

the economists's balance, rough and imperfect as it is, has made Economics more exact than any other branch of social science."

Economics is, however, less exact than the physical sciences specially the simpler ones like Physics, Chemistry, Astronomy, etc., and the Laws of Economics are less exact than the laws of the simple sciences.

Now the laws of simple sciences like Physics, Astronomy, etc., deal with simple forces and phenomena which can be observed and generalised accurately ; and hence the laws of these sciences are exact. The laws of the science of man (i.e., social science) deal with the complex phenomena of human life and society which cannot be observed and generalised so accurately as the simple phenomena of Physics and Astronomy ; and hence the laws of the science of man (i.e., social science) are less exact than the laws of the simple sciences of Physics and Astronomy. Economics is part of the science of man, and economic laws are less exact than physical or astronomical laws.

Marshall says, "The laws of economics are to be compared with the laws of the tides, rather than with the simple and exact law of gravitation." The explanation is obvious. The laws of the tides dependent upon complex conditions are inexact. The law of gravitation dependent upon simple conditions is exact. The inexact laws of economics are to be compared with the inexact laws of the tides rather than with the simple and exact law of gravitation.

Are Economic Laws Natural Laws?

(A) Economic Laws.

The term Law has various meanings :

(i) Law may mean a law passed by the Legislature or Parliament of a country. Such a law is a command of the sovereign authority of the state and is enforced by such sovereign authority ; *an economic law is not a law in this sense because it is not the command of the sovereign authority of the state addressed to its citizens and enforced by the sovereign political authority in case of disobedience.*

(ii) Law may mean customary law. An economic law is not law in this sense.

(iii) Law may mean moral law enforced by public opinion though not by the sovereign political authority of the state. An economic law is not law in this sense also.

(iv) Law may mean a statement of relation of cause and effect between phenomena, as a law of Physics or of Chemistry. Economic Laws are laws in this sense as they are statements of relations of cause and effect between economic phenomena.

Marshall defines economic laws as 'Social laws relating to branches of conduct in which the strength of the motives chiefly concerned can be measured by a money price.'

(B) Economic Laws and Natural Laws.

The question has been asked as to *whether these laws of economic science are natural laws.** The answer depends upon what we exactly understand by natural laws. There are *two views* on this question.

(1) *One view is that Economic Laws are not natural laws.* Persons who maintain that economic laws are not natural laws declare that the expression 'natural laws' should be applied only to the laws of those sciences (e.g., Physics, Chemistry, etc.) which are under the rule of "inexorable Necessity," and not at all subject to the free will of man, which are universally true and which must always happen without any exceptions or variations; and that economic laws belong to the realm of Liberty, they can be changed by the free will of man, and hence are not universally true and thus are not natural laws.

(2) *Another view is that Economic Laws are natural laws.* The holders of this view use the expression 'natural laws' in a wider and more comprehensive sense, they maintain that natural laws include (a) laws which are universally true, and invariable, and also (b) laws which are not universally true, which are true only under given conditions. Economic laws are natural laws which are true within limited sphere and not invariably and universally true.

* In the words of a well-known economic writer, "An economic law is a natural law so far as it states that given conditions will lead to given results. An economic law is not a natural law so far as it implies that human effort is impotent to modify the conditions which lead to the results."

They hold that a natural law is really nothing more than the expression of certain relations which arise spontaneously among things or among men. These relations may, to be sure, be called necessary ones, but only when certain conditions are fulfilled ; and *hence economic laws are also natural laws* because they are also true if certain foregoing economic conditions are fulfilled.

Relation of Economics to other Sciences.

Modern Economics with its wide scope (comprehending large and important portions of the life of Man and Society) has relations more or less close with almost all sciences—and changes and discoveries in other sciences often influence very deeply the economic life of a community. Economics has close and intimate relations with most of the sciences dealing with Man and Society ; again discoveries in Physics (relating to electricity, water-power, etc.) or in Chemistry, agricultural or technological, may and do revolutionise the industrial life of nations.

1. Economics and Sociology.

(1) According to Comte, the French Positivist Philosopher, *there is but one social science*, sociology which deals with all aspects of social life—economic, political, legal, etc., as one whole, because these are all very intimately connected and mutually dependent. *Economics* (the study of the economic aspect of social life because it is so closely connected with other aspects of social life) *cannot be separated from sociology* (the general science of society) so as to form a distinct science.

(2) In striking opposition to Comte, some economists maintain that Economics deals with the phenomena of Wealth almost completely isolated from other social phenomena ; and *hence Economics has no concern with sociology*.

(3)* *The truth lies between these two extremes.* Comte

* "One of the chief debts which we owe to Comte's genius, lies in the clearness and vigour with which he showed how complex social phenomena are, how intricately interwoven with one another, and withal how changeable. Hence he argued against any separate study

is both right and wrong. He is right when he maintains that all social phenomena are closely connected—the phenomena of wealth are influenced by political facts, legal facts etc. ; but he goes too far when he infers that therefore Economics cannot form a separate science but, that economic facts must be discussed within Sociology in connection with other social phenomena.

The fact is that though economic phenomena cannot be completely dissociated from other classes of social phenomena owing to the unity of human nature and society, yet they can be sufficiently isolated so as to form a distinct science ; and it is necessary to take *Economics as a separate branch of study, because without such specialisation, scientific thoroughness and exactness cannot be attained in any branch of knowledge.*

(i) *Economics is thus a distinct science in itself with its own specialists and primarily and directly concerned with economic phenomena alone.*

(ii) *It is at the same time a branch of Sociology—at least it will be a branch of sociology, when the unified social science will come really into existence ; because it deals with a particular class of social phenomena, viz., those social phenomena which are due to the wealth-getting and wealth-using activities of man.*

2. Economics and Political Science.

Economics and Politics are both social sciences ; and as such are branches of Sociology, the general science of society. Economics deals with wealth in relation to man ; Political Science deals with Government. Economics is closely related to Political Science, because

of one part of them, and was specially vehement in his condemnation of the contemporary English economists.

.....But the complexity and intricacy of social phenomena afford no reason for dispensing with the aid of the economic organon in its proper place : on the contrary they increase the necessity for it.

It is vain to speak of the higher authority of a unified social science. No doubt if that existed economics would gladly find shelter under its wing. But it does not exist : it shows no signs of coming into existence. There is no use in waiting idly for it ; we must do all that we can with our present resources" (Marshall—*The Present Position of Economics*).

(1) The production and distribution of wealth are greatly influenced by the kind of Government under which the people are living. There will be more production of wealth and better distribution under a strong and just government, than under an incapable and an unjust government. Again the production and distribution of wealth under a system of private property, free contracts etc. would differ greatly from the production and distribution of wealth under a system of government ownership and management of industry.

(2) On the other hand political institutions are very greatly influenced by economic conditions and institutions. The government of a country pastoral in its economic life, differs from the government of a country agricultural in its economic life, or from a country with a large and prosperous manufacturing population.

(3) There are also many social problems (*e.g.*, the government control of monopolies and trusts, the government management of railways, etc.), which are common to both Economics and Political Science, which have (i) an economic aspect and can be examined from the point of view of economic efficiency and just distribution of wealth, and (ii) a political aspect and so can be examined from the point of view of politics and administration.

In recent years the State in modern countries has been taking an increasing part in shaping and regulating the economic life of the nation in relation to production, industrial education, improvement of transport, credit and foreign trade, protection of labour and social services expenditure in connection with unemployment, old age pensions, etc. Political science and economics are being brought into closer and closer relations.

The extensive economic activities of the State in Fascist Italy have their importance in this context.

The State in Soviet Russia aims to control all economic activities of the nation in the interest of the proletariat.

Economics and History.

The part of History which is most valuable to the economist is—*economic history*, the history of economic institutions

and conditions. A clear grasp of the main facts of economic history is so essential to the proper understanding of economic theories, that it is now usual to begin economic text-books with a sketch of economic history.

We may note that—

(i) The theories of Economics are often illustrated and confirmed by economic history, *e.g.*, the theory of paper money in Economics is illustrated and confirmed by the economic history of paper money in France during the French Revolution, in the United States during the Civil War, and in European countries generally during the last World War. Theories of Economics which are not confirmed by economic history but are condemned by it have to be rejected as the result of such criticism. The Wages-Fund Theory of Economics is contradicted by the economic history of wages in different countries and in the same country at different times—and so this theory of Economics has to be rejected.

(ii) New economic theories are often based on and are established by economic history. The theory of machinery and its influence on wages, theories of credit cycles are based on economic history.

Adapting Sir John Seeley's well-known couplet, it may be asserted to a certain extent, 'Economics without economic history has no root, economic history without Economics has no fruit.'

Economics and Ethics.

(1) Economics, *regarded as a science*, discusses the causes of economic phenomena ; and so it has to consider how far man in civilised societies is influenced by ethical motives in the production of wealth, and its exchange and distribution and consumption. Ethical motives play a somewhat important part as regards the determination of wages ; but they can be generally neglected in investigations about the value of money and in foreign exchanges.

(2) Ethics lays down that in every state, the distribution of wealth should be just. Economics, *regarded as an art*, puts forward its ideal of distribution of wealth ; and Ethics has to see how far the ideal of distribution put forward by Economics

is ethically just. The discussion of the ethical aspect of distribution has led to great controversy between economic writers.

Economics has exposed the defects of indiscriminate charity ; and has thus made the ethical redistribution of wealth by public and private charity more careful, methodical and beneficial.

We have seen already that in Marshall's opinion '*Economics is the handmaid of Ethics*' (to quote the words of Prof. Pigou)—the main interest of Economics is in this that it helps to promote social' welfare.

On the subject of the relation of Economics to Ethics Prof. Seligman's conclusion is this : "Since Economics, like Ethics, is primarily a social science, the true economic action must *in the long run* be an ethical action..... The modern economist has become just as mindful of the ethical aspects of every economic problem as the modern moralist has been forced to recognise the economic side of his ethical problem." And in this he reflects the opinion of the large majority of economists of the present day.

* Economics and Psychology.

(1) Psychology deals with mental phenomena—the phenomena of the Intellect, the Will and the Emotions. Economics is the science of wealth in relation to man ; and it has to discuss how the production, exchange, distribution and consumption of wealth in a society are influenced by the mental phenomena of effort, want, etc., of the different classes of that society. Hence *Economics is intimately connected with Psychology and is dependent on it.*

* It is to be noted that the main outlines of modern economic theory are based upon the system of psychology known as Hedonism or Utilitarianism which makes pleasure the chief good of man which he pursues by all means—the broad principles of modern Economics were framed some decades ago by men who held, and to a large extent created the body of psychological doctrine known as Hedonism or Utilitarianism. It is now generally recognised however by modern psychologists that the hedonistic psychology is inadequate and partially misleading ; and so it may be reasonably questioned whether the main outlines of present-day economic theory (with its apparatus of desire and utility) based upon the obsolete hedonistic psychology are not based on a foundation of sand. Some writers (e.g., Dickinson in his *Economic*

(a) As Mr. Wicksteed remarks in the Dictionary of Political Economy, "If Political Economy is the science of

Motives) maintain that the gap between the old hedonistic psychology and the new behaviouristic psychology is much narrower than is often supposed and that for the practical purpose of the economist the old psychology still remains substantially valid—others seriously object to and dispute this view. *A full and satisfactory examination of the psychological foundations of modern economics has in recent times become absolutely necessary.*

Graham Wallas has examined the psychological basis of politics. Bertrand Russell in his *Principles of Social Reconstruction* considers the psychological foundations of politics—suggests a philosophy of politics based upon the belief that impulse has more effect than conscious purpose in moulding men's lives. "All human activity springs from two sources: *impulse and desire*. The part played by desire has always been sufficiently recognised.

But desire governs no more than a part of human activity, and that not the most important part but only the more conscious, explicit and civilised part.

Impulse is at the basis of our activity, much more than desire... what applies to artistic creation (*e.g.*, painting a picture or writing a book) applies equally to all that is most vital in our lives; direct impulse is what moves us, and the desires which we think we have are a mere garment for the impulse." Bertrand Russell's suggestion as regards the proper psychological foundations of Politics may bear rich fruit as regards the inquiry into the true psychological foundations of Economics. Indeed it seems fairly certain that great business organisers organising 'big business', and great inventors making inventions revolutionising the industrial life of nations are impelled more by the creative impulse than the mere hedonistic desire for gain—and if this be true, it would remove some of the most important objections against the socialistic reconstruction of economic society.

Developments in 'group psychology' and in 'the psychology of the unconscious and the sub-conscious' may have important influence on economic theory and practice.

Veblen's standpoint.

Veblen, the founder of the influential school of 'institutional economics' in America strongly criticises economic theory down to the middle of the nineteenth century on account of its hedonistic psychology. He insists on a more realistic view of human nature, based upon modern psychological advances, and investigates the origin and nature of the institutions through which the economic side of the life process functions.

"The economic part of the life process of society is, in Veblen's view, that part of human activity which is concerned with coping with external nature to the end of providing for man's material wants. On this basis it is possible to set up a classification of human traits and institutions. Those which assist in furthering the provision for economic wants are regarded as "generically human," in that they act to support

wealth then it deals with efforts made by man to supply wants and satisfy desires." "Want," "Effort," "Desire" are each and all psychic phenomena. Hence Economics is closely related to Psychology.

the life of mankind in society. Those which hinder this provision act as an obstruction to the full development of man's ability to cope with his environment, in respect to his material wants. Among the instinctive propensities of human nature are three which are definitely assigned to the former class, (1) the parental bent, (2) the instinct of workmanship, (3) the bent to "idle curiosity."

Taken together, the parental bent and the instinct of workmanship constitute the chief instinctive dispositions conducing to the material welfare of the race and to its biological survival.

The bent to idle curiosity . . . is the instinctive source out of which modern science has developed."—P. T. Homan, *Contemporary Economic Thought*, 1928, pages 134-135.

Veblen is no Socialist.

The Socialist standpoint.

Economists of the Classical School have a hedonistic conception of human nature which is disputed by the socialists. *The classical writers imply that human nature is essentially selfish* and wants the most pleasure with the least pain. It is stated that most work involves hardship, the average man works for pay and that his work is strenuous and well-directed in proportion to the pay—the average person wants as much pay as possible and the maximum satisfaction of his wants with minimum labour possible, he works more strenuously for himself under the stimulus of self-interest in the capitalist state than he will work for the common good in the socialist state. The average labourer, also the business leader are influenced in their economic activity preponderantly by selfish motives.

The extreme socialist view is different. *Socialists maintain that human nature is not so essentially selfish* as suggested by the classical school, that men are being degraded or made selfish by the capitalist system. Socialism maintains that in the socialist state with a more efficient economic organisation and large use of machinery and greater application of science, also greater sense of freedom and better treatment for the workers, work will cease to be a hardship. "Overwork is repulsive to human nature—not work. Overwork for supplying the few with luxury—not work for the well-being of all. Work, labour, is a physiological necessity, a necessity of spending accumulated bodily energy, a necessity which is health and life itself. If so many branches of useful work are so reluctantly done now, it is merely because they mean overwork, or they are improperly organized."—(Kropotkin quoted by Bertrand Russell in *Roads to Freedom*.) Bertrand Russell suggests that the whole community could be kept in comfort by means of four hours' work a day for each worker. Also men—labourers, business leaders, inventors—can be induced to the full application of their faculties by other than selfish motives. Already in the capitalist states men of science, poets, artists,

(b) The economist has not to establish the fundamental principles of psychology, *e.g.*, the nature of a concept or of reasoning; he *accepts psychological principles as his data rather than establishes them as his conclusions.*

In Political Economy, (i) the department of Consumption is largely taken up with the application of the great psychological law of diminishing returns of satisfaction to successive increments of commodity or service; (ii) the department of Exchange discusses the laws of value which also depend greatly upon the psychological law of diminishing returns of satisfaction; (iii) the department of Production which includes the theory of labour turning upon the psychological law of the increasing tiresomeness of successive increments of effort, etc.

“ **Economics and Physical Science.** ”

Economics is connected with Physical Science in different ways. For example, Economics takes from physical science the law of diminishing returns which occupies such an important place in the economic theory of production, and also in the theory of distribution.

Economics and Statistics.

The essential feature of statistics consists in the employment of numerical data in all kinds of inquiries.

Some writers maintain that *statistics* is a separate science; some would regard it rather as a *scientific method based on the employment of numerical data*, and hence forming a special branch of inductive logic or methodology.

do their best and most strenuous work not primarily for pay but for the work itself, for the joy of creation. In the socialist state, labourers, business leaders, inventors will be doing their work partly for the love of the work they are best fitted to do, also to an important extent they will be actuated by other than the selfish motive of pay for themselves and will be working for the common good. Human nature is plastic. Education will work wonders, will greatly develop unselfish impulses. Honour and social approbation will be powerful factors in making men—labourers, business leaders, inventors—do their best in economic activity for the common good of the nation. Socialists declare that their standpoint is supported in part by the experiences of the Five-Year Plan in Soviet Russia.

The statistical method of collecting carefully quantitative observations about facts and drawing inferences from them is used in almost all Sciences.

And it is very useful in Economics

(1) in describing the condition of a country by means of statistics of production, wages, prices, exports, etc.,

(2) in supplementing deductive reasoning by verifying its results,

(3) in suggesting empirical economic laws from a statistical examination of facts.

The statistical method will be of increasing importance in economics. Indeed Wesley C. Mitchell, the leader of the younger American economists, also Sir Josiah Stamp, a distinguished British economist, are of opinion that the statistical method will transform economics and will render obsolete the work of Dr. Marshall and others. (Refer to METHODS, page 39 of this book).

Economics and Mathematics.

Economics has been described by some writers as essentially mathematical in character ; and they are justified in a sense for Economics includes many inquiries that deal with quantitative relation, e.g., the inquiry into supply and demand as regulators of value, the inquiry into changes in the purchasing power of money, etc. Mathematical methods used in Economics are chiefly of two kinds : (1) the algebraic methods, (2) the diagrammatic method. The application of the former requires knowledge of various technical processes and as used by Cournot, Jevons, Marshall and others involves the infinitesimal calculus. The diagrammatic or graphic method, on the other hand, requires no more than an elementary knowledge of the principles of Geometry. The two methods are frequently combined.

Objection against the Mathematical Method and reply to it.

Mill, Cairnes, Cliffe Leslie and other object to the use of the mathematical method in Economics—the substance of their

objection is that the mathematical method requires exact numerical premisses and exact numerical premisses are not obtainable in Economics. In reply to these writers, Prof. Edgeworth may be quoted: "It is necessary to realise that mathematical reasoning is not, as commonly supposed, limited to subjects where numerical data are attainable. Where there are data which though not *numerical* are *quantitative* there mathematical reasoning is possible and may be indispensable." An important function of mathematical analysis is to discover relations between quantities whose numerical values are unassignable.

Indirect and Direct Advantages of Mathematical Method in Economics.

(1) A very important indirect advantage consists in the educational influence in stimulating precision both of thought and of expression generally in Economics and in eliminating errors due to slovenly and inaccurate reasoning.

(2) As regards direct advantages the use of mathematical methods has brought into prominence:

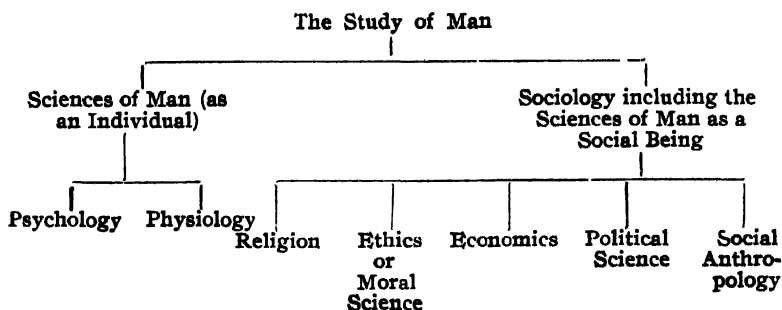
- (a) the *continuity* of economic phenomena (as in the diagrammatic treatment of the law of supply and demand).
- (b) the *mutual* dependence of different economic phenomena (*e.g.*, supply, demand and price).

Also the use of mathematical signs even in cases where not absolutely necessary provides a terse language for Economics facilitating exposition and making it more concise than would be otherwise the case.

Prof. Seligman's opinion "the mathematical method is the abstract method pushed to an extreme; the statistical method is the concrete method pushed to a like extreme" is not acceptable.

Economics and the other Sciences of Man.

The following diagram shows in a general way the place of Economics among the other sciences of Man (including the social sciences).



[It may be of some interest to note here the important place among the sciences given to Economics (Varta) by the ancient Hindu writers.

Kautilya holds that four and only four are the sciences — Anvikshaki (or Philosophy), the Triple Vedas (Hindu Scriptures supposed to be a divine revelation like the Bible of the Christians), Varta (or Economics consisting of the study of agriculture, commerce and trade) and Danda-Niti (Science of Government).

The School of Manu hold that there are only three sciences ; the Triple Vedas, Varta and the Science of Government (Anvikshaki being but a special branch of the Vedas).

The School of Brihaspati go so far as to say there are only two sciences—Varta (Economics) and the Science of Government (Political Science)].

METHODS

In science, the word '*method*', refers to the ways to be followed for discovering the truths of that science. In discussing method* we have to discuss the logical processes which are specially appropriate in Economics, *i.e.*, the *methods of investi-*

* Bagehot's remark on the utility of a suitable method for economic inquiries is worth quoting : "If you attempt to solve such problems without some apparatus of method, you are as sure to fail as if you try to take a modern military fortress—a Metz or a Belfort—by common assault ; you must have guns to attack the one and method to attack the other" (*The Postulates of English Political Economy*).

gation and proof which are most suitable for this science, and also how the character of the conclusions is affected by them.

The subject of methods is one of the most controversial in Economic Science. Economists have differed more or less about their ends, and naturally they have differed about methods. To use the words of a distinguished Italian economist,* “If your end is not the same, your means cannot fail to be different.”

The methods chiefly used by economic writers are : .

I. The Deductive Method.

(1) THE DEDUCTIVE AND ABSTRACT METHOD (also called synthetic, rational or *a priori*). It is called the deductive method because it *consists in deducing a large number of truths from a few simple general laws about Man, Nature and Society, viz.,* (1) man always desires to obtain a maximum of satisfaction with a minimum of effort, risk and trouble (the law of the least sacrifice), (2) the law of diminishing returns from land (3) the law of population, and (4) freedom of competition.

The earlier English writers on Economics, (Ricardo, Senior, Mill, Cairnes, etc.) known as the *classical school*, in theory *professed to regard this deductive method as the only suitable method for studying economic questions*; though in practice some of them partly departed from it.

They declared that the *inductive method was unsuitable in Economics*

- (i) because experiment was not possible in Economics,
- (ii) because the phenomena studied in Economics were too various and complex to be successfully studied from the inductive point of view.

They were of opinion that the right method of study was deductive, i.e., proceeding from a few simple, undisputed general data (about man, *e.g.*, man's desire for wealth, man's aversion to labour; about nature, *e.g.*, the law of diminishing returns, etc.) to less general truths.

* Luigi Cossa—*Introduction to the Study of Political Economy*, Theoretical Part, Chap. VI.

Two schools of economic thought use the abstract method and have developed it largely.

(i) *The mathematical school* as represented by Cournot, Jevons, Marshall, Irving Fisher and others.

(ii) *The psychological or the Austrian school* which specially studies the theory of value by thorough-going psychological analysis of human desires.

II. The Inductive and Concrete or Realistic Method (also called empirical, or *a posteriori*). *This method in economics, consists in observing carefully particular social facts (whether in the present as indicated by statistics, or in the past as recorded in history), and then establishing general economic laws from an examination of these particular facts.* (In *deduction* we reason from the general to the particular, from the more general to the less general; in *induction* we reason from the particular to the general, we prove the general law with the help of known particular truths and facts). The inductive method in a special form is also called the *historical method* because it studies the economic institutions of each nation from the historical point of view.

This method was preferred by the German school, or more strictly the German historical school (Roscher, Knies, Hildebrand, etc.), by Cliffe Leslie and others in England, and by some of the best writers in the United States. The use of the inductive method in Germany was a reaction against the extreme and one-sided emphasis laid upon the deductive method by the English classical economists. Too much of deduction led to a movement in favour of induction.

According to some of the extreme inductive and historical writers, the inductive method is the only method for economic science. "Political Economy has not yet reached the stage of a deductive science." (Cliffe Leslie). "The fundamental laws of the economic world are still imperfectly known and can be known only by patient induction."

A critical examination shows that each of these methods has its merits and defects.

I. (A) Merits of the Deductive Method.

(1) *Within its sphere, it is extremely effective.** From a few general premises about Man, Nature and Society, numerous valuable conclusions can be and have been derived. The deductive method as used by classical economists has been very fruitful in the past, and in certain spheres of economic inquiries (e.g., exchange and distribution) it is still of great value.

(2) Deduction has also often to be used for making more exact the conclusions established by induction. *Deduction thus perfects induction.*

(3) *Its simplicity and precision.*

To many the simplicity of this method is an attractive feature. It is much simpler to deduce particular truths from a few simple general laws than to establish general laws by induction from numerous particular facts and truths. It is because of this simplicity that this method was used almost exclusively in the early stages of the development of economic science, and is used even now so largely.

The results arrived at by the use of the deductive method are generally precise, clear-cut and well-defined. (Care must be taken however that an apparent simplicity and a superficial precision are not achieved at the expense of accuracy. That would be disastrous).

(B) Defects of the Deductive Method.

The deductive method has its characteristic defects. To quote Prof. Nicholson†

"The great danger of the deductive method lies in the natural aversion to the labour of verification."

(1) The classical economists, for example, arguing deductively from insufficient premises declare that certain laws are

* To Cairnes, a great deductive economist, "the method of deduction is incomparably, when conducted under the proper checks, the most powerful instrument of discovery ever wielded by human intelligence."

† Nicholson—*Principles of Political Economy*, Vol. I.

true *universally* and *permanently*, in all countries and at all times. *Many such laws are not supported by facts—facts are often neglected by those who advocate exclusively the deductive method.* They are not universally and permanently true, these laws may be true in some countries and at some periods but they are not true in all countries and at all times.

The universality and permanence often attributed to economic laws by many deductive writers (who often neglect facts)—these are defects.

(2) Deductive economists in many cases forget that so far as their premises are wrong or insufficient, the conclusions must be false ; and forgetting this, they arrive at economic laws not agreeing with facts and experience. *We must call, in the help of induction to test by verification the results of deduction.*

Prof. Gide remarks : *"The mistake of the classical school did not consist in too frequent use of the abstract method, but in having too often mistaken the abstraction for the reality."* For example, after having invented its '*economic man*' supposed to be prompted solely by economic motives, selfish motives, the error of the classical school lay in almost believing in the real existence of such an imaginary being (a mere abstraction) and in his existence alone in the economic world and *in deducing economic laws which were not in accordance with facts.*

It is not the deductive method that is to be condemned but a hasty, dogmatic use of it.

(3) The deductive method is now more carefully used, and the limitations relating to the premises and conclusions are better kept in mind by recent writers who come after the classical school.

Still even now, deduction alone is inadequate for the following among other reasons :

(a) The data or the first principles of the science cannot be ascertained with quantitative exactness.

(b) The circumstances which modify in every society the operation of laws deductively obtained, cannot be known by the deductive method, and are known by induction.

II. The Inductive Method.

(A) Merits.

(1) The great merit of this method is that *it bases itself upon facts*. It avoids the neglect of facts, of experience, often found associated with the other method. In close touch with realities, it proceeds from particular facts to general laws.

(2) *It is a very valuable, an indispensable auxiliary of the deductive method. By referring to facts, it tests and corrects the foundation and the conclusions of the abstract method of deduction.* For example, it shows that the theories of the older deductive economists are stated too universally and under the assumption that man is invariable and unchangeable in character, and that these theories have to be considerably modified when applied to different groups of men under different sets of circumstances whether in the same country or in different countries in different times.

(3) "It is also a means of verifying the existence of perturbing causes, of gauging their intensity or at least of discovering the empirical laws of their variation" (Cossa).

(4) The inductive method in its historical form helps us to do *justice to the mistaken theories of by-gone ages*. By the very importance which it gives to facts, it shows how a different set of facts in an earlier time may have given rise to a different set of theories. A more just and tolerant attitude towards the errors of the past is thus secured and the elements of truth in them also get recognition.

(B) Difficulties and Drawbacks of the Inductive Method.

These difficulties and drawbacks are many, and some of them are of considerable importance.

The chief danger of the inductive method is that general laws are often neglected, facts may be accumulated without any rational system of classification and generalisation into laws, and so we may not go beyond a mere collection of raw materials.

(1) Some writers of the inductive and historical school have a *tendency to neglect those permanent relations and general laws* which are to be found under the changing condi-

tions of economic life. They run the danger of making Economics purely descriptive.

Now mere description cannot constitute a Science. Economics is a Science of cause and effect and consists of laws. And in the advanced stages of the Science *deduction* becomes an absolute necessity to complete the work done by induction.*

(2) *The inductive method is less useful in the social science of economics, than in the natural sciences like Physics, Chemistry, etc., chiefly because (a) the social phenomena studied in Economics are more difficult to observe than the phenomena of physical sciences as social facts are very complex (b) experiment, that 'particular method of observation under pre-arranged circumstances' which is so fruitful in the physical sciences—this 'experimenting' is difficult, and almost impossible in Economics (because of the large interests at stake, and the great amounts of human happiness and welfare involved in the making of such economic experiments in a large modern state with its vast population and varied problems).*

(3) *The inductive method is inapplicable in many cases because of the plurality of causes and intermixture of effects. (Plurality of causes means that the same effect may be produced on different occasions by different causes ; the intermixture of effects refers to the mixing of effects produced by many causes.)*

This difficulty is avoided in the physical sciences by the use of experiments. But as already pointed out, the scope for experiments is very limited in economic science. (So here deduction is wanted).

(4) Many of the problems of political economy are complicated by the relation of *mutuality*—economic phenomena in many cases mutually determine one another. It is impossible to deal with these relations of mutuality by induction alone. (Here again deduction is wanted).

* "It is, in fact, in proportion as a science becomes deductive and enables us to grasp more and more apparently unconnected facts under the same law that it becomes perfect" (Jevons).

Conclusion on the subject of Method. -

(i) *Marshall's view.**

So either the deductive method or the inductive method alone is not quite satisfactory ; *and the true and proper method for economics is a combination of these two methods.* The best modern writers, (Marshall, Wagner and Schmoller and other leading authorities) are agreed on this point.

Marshall quotes with approval the remark of a great economist "Induction and deduction are both needed for scientific thought, as the right and left foot are both needed for walking." *The true solution of the problem of method is thus not deduction or induction, but deduction and induction.* In some economic questions more deduction is required than induction and in other questions more induction than deduction.

Different methods are appropriate in economics according to the materials available, the stage of investigation reached and the object in view.

For example, a greater use of the inductive than of the deductive method is required in treating of the subject of production of wealth. The deductive method is more prominent in the general (classical and neo-classical) theory of distribution and exchange.

(It is noteworthy that the difference between the deductive and the inductive writers on the question of method is largely a *question of theory*. In *practice* the deductive writers often use the inductive

* "Each study supplements the other : there is no rivalry or opposition between them ; every genuine student of economics sometimes uses the inductive method and sometimes the analytical and nearly always both of them together.

The generation of economists which is now passing away has worked through controversy as to method, to the extinction of that controversy. It has established the harmony between the study of facts and of ideas It has done much towards completing the main lines of *qualitative* analysis ; but it has not grappled at close quarters with the difficulties of *quantitative* analysis. "Qualitative" and "quantitative" analysis are terms borrowed from chemistry. Qualitative analysis tells the iron-master that there is *some* sulphur in his ore, he needs quantitative analysis, which will tell him *how much* sulphur there is in the ore. And so it is also in economics. Mere qualitative analysis will not show the resultant drift of economic forces."—*Memorials of Alfred Marshall*, edited by A. C. Pigou, 1925, pages 309-310.

method—Mill does this in his theory of production and in his treatment of peasant proprietorship and Cairnes in his *Slave Power* and in his discussion of the effect of the gold discoveries. And the inductive writers use deduction.)

(ii) The views of Wesley C. Mitchell and Sir Josiah Stamp.

Sir Josiah Stamp, a distinguished British economist, holds the following opinion—"It is my view that the analytical method in the line of Ricardo, Mill, and Marshall has, for the time being, at any rate, reached the limit of its usefulness, and that no striking advance can be made thereby from the ground now occupied. I do not think, moreover, that the refinements and extension of it in the mathematical or Cambridge School is likely to lead to important results. Certainly inductions by the Historical School must be so broad, and so lacking in touch with modern data, that they will yield only a small contribution to the constructive problems of the moment.

I believe that for the next advance we must depend upon realistic statistical investigation and verification, and that we stand on the threshold of a new method, which is of general application (Sir Josiah Stamp, *The Statistical Verification of Social and Economic Theory*).

Wesley C. Mitchell, one of the chief leaders of American economic thought to-day, maintains strongly that the statistical method will transform economic theory, will render obsolete the work of Dr. Marshall and others—"the development of statistical method may be expected to make more radical changes in economic than it makes in physical theory." The statistical method suitably used is expected to provide adequate factual data for the new economics to be based upon sound factual foundations. "As raw material accumulates and as detailed results are co-ordinated, with recognised apparatus and outside support, the new students who are to advance the science must be increasingly directed along the appropriate lines if they are to help in establishing economics as a quantitative science." "In so far as they accomplish this aim," says Mitchell, "they will in transforming the subject make obsolete not only the qualitative work of Dr. Marshall and others, but also the crude beginnings of quantitative work which their elders are producing"—(Quoted by Sir J. Stamp, *The Statistical Verification of Social and Economic Theory*).

A suggestion.

Many will be inclined to think that the method of Marshall and the method of Mitchell both have and will have their uses in economics, present and future.

Prof. Pigou's work in continuation of the work of Prof. Marshall shows that the largely analytical method (qualitative analysis) of Ricardo, Mill and Marshall still performs useful services. The statistical method (quantitative analysis), as exemplified in Prof. Mitchell's notable contributions, shows the important uses of quantitative analysis, applied in the light of institutional preconceptions.

The Postulates and Axioms of Economics.

Various attempts have been made to enumerate the chief assumptions of Economics, those *axioms and postulates which are assumed in Economics, and which form the basis of economic reasoning.*

Bagehot's Postulates.

Bagehot, an English economist, wanted to discuss under the name "The Postulates of English Political Economy" the *assumptions of Economics as developed in England, and to see how far they are valid. He has examined two of these postulates* (1) *the transferability of labour, i.e. the economic assumption that labourers move freely from employment to employment* (2) *the transferability of capital i.e. the assumption that capital moves freely from one industry to another.*

He points out that the first postulate assumes the existence of four conditions (i) the existence of different employments for labourers to move from one to another (ii) the existence of a strong government capable of maintaining peace and order within the country (iii) the nation must be able to defend its independence against other nations without a military system dependent on localised and immoveable persons (iv) there must be no competing system of involuntary labour interfering seriously with the free labour and its movement from one employment to another. As regards the second postulate, its applicability depends upon the existence of the following conditions (i) supply of capital at the hands of persons who may desire to transfer it (ii) labourers who can be transferred from one employment to another employment (iii) development of exchange (iv) existence of a good medium of exchange i.e. a good money (v) the means of shifting money from trade to trade. *So Bagehot's postulates depend upon certain conditions and as all these conditions are not found in all states of society (e.g. in England before the Industrial Revolution, in India before the present economic transition and to a certain extent even in India of the present day etc.) these postulates are not universally applicable and Bagehot himself admitted this. Bagehot did not live to discuss the other postulates of Economics.*

Recent developments relating to Rationalisation and vast industrial combinations mean serious modifications in practice of the theoretical assumptions relating to transferability of labour and capital.

Other Writers and their Postulates and Axioms.

Other writers have given fuller lists of the premises of Political Economy, consisting of axioms and postulates. Some of these are :

(1) Postulates about physical law, *viz.* *The Law of Diminishing Return.* The earth is of limited extent and fertility and it is under the operation of the law of diminishing return.

(2) *The Law of Population.* Population tends constantly to increase at a faster rate than the supply of food can be increased.

(This postulate is being falsified by the present trend of population in Europe and America).

(3) Postulates about the psychological basis of Economics, (a) *The Law of Diminishing Utility*—the utility afforded by an additional unit of a commodity to a man diminishes with every increase in the amount possessed by him. (b) *The Law of the Least Sacrifice*—man seeks the greatest gain in return for the least possible expenditure of effort, sacrifice and risk.

(4) That there is freedom of competition.

(5) That there is a sufficient knowledge of the market for exercising properly this freedom.

This list of axioms and postulates is not by any means exhaustive ; and many more can be added.

Again it must be remembered that some postulates (*e.g.* the postulate about freedom of competition) must be considerably modified in discussing the theory of international value or the effects of monopoly or as regards industrially backward countries like India and China at the present day.

History of Economic Thought. Modern Economic Schools.

It is necessary to give here a very short sketch of the history of economic ideas in Europe and elsewhere, because occasional historical references to these ideas will have to be made in the course of the present work. The history of economic thought in Asia still remains largely unexplored—but

ancient China, ancient India are known to contain exceedingly valuable materials and offer splendid fields of research to intending investigators.

Scientific schools of Economics are not found in Europe in ancient times and in the Middle Ages. Still a brief notice of economic ideas even in those times will be of some interest in connection with the history of economic thought.

1. (A) Economic Ideas in ancient India.

The history of economic ideas in ancient India is enormously rich and fruitful in many respects—it is divided into different periods as ancient India passed by stages from the mainly pastoral and agricultural stage of the Vedas to a stage which combined agriculture with extensive manufactures and commerce (home and foreign) under powerful, well-established governments like those of Chandra-Gupta (Sandrokottus of the Greeks) and Asoka. Kautilya, the Indian contemporary of Aristotle, was the Prime Minister of Chandra-Gupta, the great Indian Emperor; and Kautilya was much more advanced in his economic ideas than even the great Aristotle (Aristotle who in a sense may be regarded as the father of European economic and political science)—for Aristotle and the Greeks condemned interest, trade and exchange while Kautilya recognised their use and importance in the economy of national life. Kautilya's views on slavery and women are also much more liberal than those of Aristotle.

The ancient Hindu writers highly esteemed agriculture, but many of them also realised fully the great place of mining, manufactures, trade and commerce in the economic life of the community—and in this they not only surpassed Aristotle and the ancient Greeks and also the ancient Romans but even the Physiocrats of much later times who gave exaggerated importance to agriculture and unduly neglected and deprecated commerce and manufactures.

(B) Economic Ideals in ancient Europe.

(a) The Greeks.

The three Greek writers who are of most interest to the economist are Plato, Xenophon, and Aristotle.

The Greeks always made their economic researches a subordinate part of their political or moral philosophy.

They defended slavery as an economic institution ; appreciated the advantages of division of labour : but condemned commerce and trade and the taking of interest.

(b) *The Romans.*

The Romans derived their economic ideas almost entirely from the Greeks. They condemned interest, commerce and trade. Agriculture was highly esteemed.

Roman law (the *corpus juris civilis*) gives us a large amount of information about economic institutions and conditions in ancient Rome.

II. Economic Ideas in the Middle Ages of Europe.

The schoolmen and the clergy of the Middle Ages (1) condemned usury as opposed to the teaching of the Bible (2) and enunciated the doctrine of just price *i.e.*, the price of every commodity should be such as to enable its producer to live in accordance with the accepted standard of living of his class.

III. Economic Schools in Modern Times.

In Europe, Economics in a strictly scientific and systematic form, begins with the Physiocrats. The Mercantilists though not strictly scientific and systematic preceded the Physiocrats.

1. *The Mercantile restriction, or commercial system (known also as Colbertism).* Mercantilism was not strictly a school of economics worked out systematically by a body of political economists ; rather it meant the practical economic policy followed by statesmen (*e.g.* Colbert in France, Cromwell in England) and explained and justified in fragmentary works by several writers.

The discovery of mines of precious metals in America made Spain immensely wealthy ; and this induced other nations *e.g.* France, England, Italy to make investigations as to how they also could acquire gold and silver without having mines. The Mercantile system proposed to investigate how a state without mines could acquire gold and silver by the regulation of foreign

trade by the Government. According to mercantile writers, this was to be done by the state encouragement of home manufactures, and exports and by making the exports larger than the imports, and *then importing money* from foreign countries in exchange for these excess exports.*

Some of the leading ideas of the Mercantile System were thus (1) to increase the quantity of the precious metals within the country by maintaining an excess of exports (2) to encourage manufactures even at the expense of agriculture (3) to do these things by strict regulations laid down by the government.

The Mercantile System was intensely political. It regarded material goods with reference to the political power of the state.

"The essence of the system lies...in the total transformation of society and its organization, as well as of the state and its institutions, in the replacing of a local and territorial economic policy by that of the national state." (The Mercantile System—Gustav Schmoller).

The system was dominant in Europe from the sixteenth century to the middle of the eighteenth century.

2. The Physiocratic School.

In Europe, the first scientific school of Economics, strictly so called was formed by the Physiocrats of France. Quesnay, Gournay, Turgot, were the principal Physiocratic writers.

The Physiocrats marked a strong reaction against the Mercantile System—they specially criticised the mercantilist idea of Government regulation of industries and trade.

They taught (1) that the physical world and also human society are subject to *natural laws*, and that if men follow these natural laws, their mutual relations would be regulated according to the principles of justice. The Physiocrats therefore proclaimed the doctrine of *laissez faire* (i.e. the Government should not interfere with industries and trade), declared that industries

* The mercantilists thus attached very great importance to money (the precious metals) in foreign trade, perhaps they exaggerated the importance of money but it is not correct to say that they regarded only the precious metals as wealth.

and trade would flourish best under natural laws without interference from the Government.

They advocated free trade.

(2) The Physiocrats also maintained that *only agriculture increased the wealth of a country, and yielded a net surplus (produit net)* over the expense of production, and that manufactures and commerce merely changed the form or position of raw materials and so were barren (unproductive) and did not increase the wealth of the country by any net surplus above the expenses of production.

(3) As they held the opinion that only agriculture was truly productive and the sole ultimate source of wealth, they naturally formed the conclusion that the revenue of the state should be raised by a *single direct tax (the impôt unique)* levied upon land.

The advocacy of *laissez faire* by the Physiocrats supplied a much needed corrective to the mercantilist doctrines of the time ; but the Physiocrats erred in attaching an excessive importance to agriculture.

Adam Smith.

Adam Smith, the great Scotch economist, developed the doctrines of the Physiocrats, and in many cases supplied the required qualifications.

(1) *He advocated the system of natural liberty*—based on individual liberty ; he held that the individual pursuing his own interest* freely and without restriction from the Government would indirectly promote the welfare of all ; and his *crushing criticisms of the Mercantile System* and *powerful defence of free trade* mark a very important stage in the history of European economic thought and practice.

(2) He avoided the Physiocratic mistake of making agriculture the sole ultimate source of wealth, and recognised the productive character of manufactures ; but still he showed some

*It has been humorously remarked of Adam Smith that he "seemed to think there was a Scotchman inside every man." The reference is of course to the important place which individual self-interest occupies in his economic theory.

partiality for agriculture, and declared that in agriculture nature helps man.

(3) He is also one of the greatest theorists on finance.

His most famous book "The Wealth of Nations" has exerted greater influence on economic theory and practice than any other single economic treatise. "The life of almost every one in England—perhaps of every one is different and better in consequence of it" (Bagehot).

3. *The Classical or Deductive School.*

This school is sometimes also referred to as the *Ricardian or English school*; and some of its most important writers are Ricardo, McCulloch, James Mill, J. S. Mill and J. E. Cairnes.

(i) All these writers very largely use *the deductive method*. For them Economics is a *Science*, its scope is theory and not practice.

(ii) They are all more or less *pessimistic* about the future of the working classes.

Malthus does not strictly belong to the Deductive School for his own method is largely inductive.

Malthus's chief work in economics relates

(i) His theory of population; how population tends to increase faster than subsistence.

(2) His important contribution to the so-called Ricardian theory of rent.

Ricardo's name is specially famous for his theory of rent known after him as the Ricardian theory of rent, his theory about the international distribution of money, his theory of value as based upon labour and other important contributions to the theory of distribution and exchange.

John Stuart Mill began as a strict follower of *Ricardo*,—as regards the theory of distribution and exchange, specially as regards rents, profits and value; and was at first a staunch advocate of *laissez faire*, but later on he developed in different directions, and specially in the direction of Socialism.

4. *The Historical or Inductive School.*

This school rose in Germany in the middle of the 19th century, as a reaction against the Classical School. Some of its principal writers are Roscher, Knies, Hildebrand, Schmoller in Germany, Cliffe Leslie in England and others in America.

Instead of deducing economic laws from a few abstract general principles, the Historical School pays special attention to tracing the *concrete historical development of economic life in its different stages*, it maintains that economic laws are not universally true in all times and places but that there are *different classes of economic laws which are true in different stages of the economic life of a nation*. (This is what is meant by the *relativity of economic doctrines*).

(a) This School prefers the *inductive method*. (b) The historical writers generally give Economics a more extended scope than is usual with the English economists—they make Economics treat of what is as well as what *ought* to be. They hold that Economics has a high ethical task, and they powerfully emphasise the direct intervention of the state as a factor in the realization of the ideal.

5. **The Socialist School.*

Socialism is essentially a protest against the principles of private property, indiscriminate competition and laissez faire.

Socialism is a powerful and growing force. It has its followers in millions, among the labouring classes of almost all countries in Europe, in America, even in Japan—though not of much importance yet in India. It has an appreciable following among the most highly cultured sections, among artists, men of letters, and men of science in Europe, also in America.

The Socialists maintain that the present economic and political organization of society is seriously defective, *economically it is wasteful and inefficient, and ethically it is immoral*

* For an examination of the socialist criticism of the Modern State, and of the constructive programme of Socialism, refer to the chapter on Socialism.

because it gives too much of wealth to the rich and too little to the poor ; and that it is not the result of liberty, but it is the result of injustice and plunder by the more powerful social classes. *They declare that the principles of private property and free competition* (on which the existing social organization is based) in practice *concentrate wealth in the hands of a few rich persons, and keep the vast majority of the people in chronic hopeless poverty*, and thus lead to great sufferings and manifold social maladies.

Different remedies are advocated by different classes of socialists :

(i) **Communists** demand the abolition of private property in all kinds of wealth. They maintain that all wealth should be the common property of all persons.

(ii) **Collectivists** demand the abolition of private property only in the instruments used for the production of wealth *e.g.* land, capital ; but not as regards wealth which is not used in production.

(iii) **Land Nationalisers** are those socialists who are for abolishing private property only as regards land.

As regards plans for the future socialist state which is to succeed the present system, socialists may be divided into two chief classes :—

(i) **Utopian Socialists** (the older writers More, Saint-Simon, Fourier, etc.) who are for constructing a new Socialist State according to some abstract conception of justice.

(ii) The so-called **Scientific Socialists** (Marx, Lassalle, Engels etc.) who refuse to indicate clearly the exact organization of the future socialist state ; but who declare that some prominent features of the present social system *e.g.* production on a large scale, trusts, the development of public services like State railways, municipal tramways, waterworks etc., are the preliminary symptoms of the future socialist state, which is thus contained in an embryonic form in the present social organization.

There are **evolutionary Socialists** who believe that the socialist state will be established by gradual evolution.

Revolutionary Socialists believe that the socialist state will be brought into existence only after a violent and bloody revolution.

In the fully developed Socialist State, private property and free competition between individuals are to be replaced by government ownership of land and capital and government management of all industries (agriculture, manufacture, mining, commerce, etc.) and a just distribution of wealth among the citizens under government control.

State Socialism.

State socialism is not the socialism of revolutionaries planning the overthrow of existing states and institutions and the establishment of the Socialist State ; *it rather stands for the tendencies of existing governments to extend their functions.* State socialism seeks to benefit labourers by old age pensions, workmen's insurance and other measures, one of the objects being to conciliate the labouring classes and thus to prevent them from becoming revolutionary socialists. It has been described as *curing socialism by inoculation*. This form of socialism has been largely advocated by writers of the Historical and Inductive School in Germany.

Schools classified according to nationality of writers.

Economic Schools have been also classified according to the nationality of members ; the principal schools classified in this way are the following :

(1) The English School.

The English Classical or Deductive School is only one among many groups of writers belonging to the English School of Political Economy. The history of the English School from the days before Adam Smith to the present time is a very important part of the history of economic science. (For the Classical School see page 46).

The Manchester School.

The men of the Manchester School were generally in favour of a

policy of *laissez faire* (non-interference by government) in industry and trade. The Anti-Corn Law League agitation resulting in the triumph of *free trade* in England was their greatest practical achievement. The school favoured a *pacifist foreign policy*—peace, non-intervention in foreign political affairs, and reduction of military expenditure were some of its watchwords. Peace is the end, and free trade is the means to that end. The charge that the Manchester School desired to cut off the connection between the mother country (Britain) and the colonies is not strictly correct. As regards *factory legislation*, it was opposed to laws which interfered with the freedom of contract of adult labourers, but it approved the laws for the protection of young persons.

The twin leaders of this school Cobden and Bright were men of action, rather than students, though they were both. The school is gone, but England, in some ways at least, is the better for it.

(2) The German School.

The German School has also a long history. The German Economists fall into different groups, one of the most important of which is the Historical School with its different branches. (For the German Historical School see page 47).

(3) The Austrian School.

The Austrian School of Economics, so called from the nationality of its members, uses the deductive method and treats the doctrine of value as the cardinal point of economic theory ; their great contribution to Economic Science is the final utility theory of exchange value.

(4) The American School.

The term American School has been sometimes applied to Henry Carey and his followers ; they reject the Ricardian doctrine, and the Malthusian theory of population of the English School. They hold that value is determined by the cost of reproduction and they advocate protection. These doctrines are connected with the special conditions prevailing in a new and flourishing country like the United States.

Among recent American writers will be found adherents of the Austrian School, and also of the Historical School. The

School of "institutional economics" in the United States requires prominent mention—it is considered in pages 53—54. There are also writers belonging to no school in particular and trying to combine the best methods and the results of different Schools.

And this is the case in all countries with many of the best economists of the present day.

India.

For some hundreds of years, India has been in a condition of arrested development, suffering from a sort of paralysis, economic, political and social ; and so in modern times (excluding some recent work) India has not much to show in the way of original economic thought, certainly nothing comparable to the magnificent pioneer work of ancient India. It is time and more than time for Indians to wipe out this blot and reproach.

Present condition of Economic thought.

A characteristic and most welcome feature of present-day economic thought in all countries is a *note of wide catholicity*—the attempt to take a broad view of things and utilise elements of truth from all quarters and schools.

The best recent writers in their economic work try to combine the peculiar excellences and truths of the different schools (*viz.*, the deductive school, the inductive school, the analytical school, the statistical school and other schools) while at the same time avoiding their weaknesses.

For example, as regards *method* these writers use the deductive method, or the inductive method, or both, according to the nature of the particular economic investigation in which they are engaged. The utility of the historical method in its proper place is fully recognised. Also the high value and increasing importance of the statistical method. The writers of the Classical School in their economic reasonings use the conception of the '*economic man*' who in his economic relations is supposed to be moved only by his material interests—recent writers have replaced the excessively artificial conception of the '*economic man*' by that of the '*normal man*.' The normal

man is the product of the family and society in which he is brought up, and he may have a family of his own, of which again he is a product.

As regards *scope*, they recognise that the scope of Economics is not restricted to studying the economic man guided entirely by enlightened self-interest and not influenced in the least by political and ethical impulses, and they also realise that though the phenomena of Economics cannot be completely isolated from those of other social sciences like politics, and ethics, Economics must be studied as a separate branch of study because without specialisation and division of labour systematic and accurate results cannot be achieved in any branch of knowledge.

Similarly as regards other questions. For example, on the question of *value*, current economic thought combines the elements of truth in the 'cost of production' school and the 'utility' school and thus arrives at a truer theory of value.

European and American economists who have developed modern economic science have so far based and developed it on the economic, social and other conditions (relating to the individual, the family, the class, the nation and the state) as existing in Europe and America. Modern Economics in its future development must be more catholic and comprehensive, it must take note also of different economic, social and other conditions affecting the economic life of the community in the old, civilised parts of Asia which are undergoing economic transformation by contact and conflict with the West—patient China with its ancient industrial civilisation, India with its joint-family and caste system, its strongly-rooted co-operative and communal instincts, and institutions. And to this work Indians must contribute their full share.

***. Some important economists—Marshall, Clark, Veblen, Mitchell, Cassel, Spann.**

* Refer to Professor Suranyi-Unger, *Economics in the Twentieth Century*, 1931, P. T. Homan's *Contemporary Economic Thought*, 1928, Haney's *History of Economic Thought* and other good books on the history of recent economic theory.

Marshall.

From the appearance of his *Principles of Economics*, 1890 to his death in 1924, Marshall occupied a position of unchallenged supremacy among English-speaking economists. A short summary of Marshall's notable work is given in the end of vol. 1 of this book. Marshall has developed the old English classical tradition in economics, has made very important new contributions to economic knowledge, has given economic science a new unity which it did not formerly possess. His followers have been sometimes called the Neo-classical School.

Clark.

Prof. John Bates Clark, is generally recognised as the most distinguished of the American economists who follow the classical tradition. Many economists agree with Professor E. R. A. Seligman's judgment that Clark's writings have "earned for him the reputation of being one of the five or six great Anglo-Saxon theorists of the nineteenth century, putting him on a level with Ricardo, Senior, John Stuart Mill, Jevons, and Marshall."

Veblen.

Professor Thorstein Veblen, the founder of the school of "institutional economics" in America, is a chief contributor to the literature of dissent from the classical tradition.

"The classical tradition was to take institutions for granted and to reduce human nature to a matter of rational calculation. *Veblen insists on a realistic view of human nature so far as modern psychology throws light upon it, and on investigating the origin and nature of the institutions through which the economic side of the life process functions.*" . . . He insists, however, that it is economic theory, the theory of the process through which economic activity takes place. And he presses the point further, by holding that what is ordinarily included in economic theory, systems of logic and schemes of normality,

are no more than obsolescent aspects of a bygone habit of scientific thought."

Mitchell.

After Thorstein Veblen, W. C. Mitchell is a chief leader of a considerable body of younger American economists, belonging to the school of "institutional economics". Like Veblen, Mitchell bases his economics upon psychological foundations, supplied by modern psychology, and rejects the old hedonistic psychology. His central conviction is that the economist's appointed task is to examine the nature and functioning of social institutions. His method is that of quantitative analysis. He believes that in dealing with social phenomena, our one sound and impartial source of information is statistics. "In economics as in other sciences we desire knowledge mainly as an instrument of control. Control means the alluring possibility of shaping the evolution of economic life to fit the developing purpose of our race."

***Cassel.**

Gustav Cassel, a Swedish economist of international standing, has done important work in monetary investigations, has developed the purchasing power of parity theory, has ably discussed the causes of the world economic depression. He criticises the theory of marginal utility as barren and empty and rejects as well the whole theory of value.

*** Gustav Cassel.**

"Cassel shows the influence of the Marburg school when he criticizes the theory of marginal utility as barren and empty and throws overboard as well the whole theory of value which had led to some quibbling. His explanation of all economic phenomena is the unitary principle of scarcity upon which he tries to build, with the help of his objective attitude, a purely logical structure of economics. Cassel was also influenced by positivistic and pragmatic theory as well as by the realism of Alois Riehl and Oswald Külpe, and endeavoured to reject from economic theory all the traditional elements which, in his opinion, did not further the knowledge of the logical and partly mathematical relations of real economic phenomena"—Suranyi-Unger, *Economics in the Twentieth Century*, 1931, pages 21-22.

*Spann.

Othmar Spann is a leading German economist of great influence. He develops "a universalist-organic and idealist doctrine contrasting with the atomist—individualist and materialist doctrine of Smith, Ricardo, Say, Rau, Menger, and Jevons"—Othmar Spann, *Types of Economic Theory*, Preface to the sixteenth edition.

Summary.

1. Scope of Economics.

1. Economics is partly a Science concerned with what is; and it is partly an Art, concerned with what ought to be. It has thus a theoretical and also a practical branch.

Modern Economics studies not the 'economic man,' that imaginary abstraction of some earlier writers; it studies normal men, real men as they live and move in the ordinary business of life.

* Othmar Spann.

"Spann attempts to utilize the buried treasures of German idealism for a reform of economics. Like some other representatives of modern science and poetry, Spann has recourse especially to Romanticism, the culmination of idealism, and opposes its universalism to individualism in economics. In the new psychology Spann examines Dilthey, Franz Brentano, Ehrenfels, Meinong and Külpe, in the philosophy of history Lotze, Windelband and Rickert, and perceives in the achievements of these men a more and more marked transition from mechanism and causality to an attitude which is both organic and teleological.....

Spann constructed his system by interweaving his organic and teleological thoughts with the main tendencies of German romanticism especially that part which consists of his doctrine of categories in which his universalistic philosophy is especially noticeable. According to this, the statement of individualists that the part comes before the whole is untrue. The prevalence of this attitude is even an "unspeakable misfortune" and the knowledge which it produces is barbaric, teaching a negation of life, truth, spirit and God. The fallacies to which this philosophy leads are atomism, mechanism, individualism, capitalism, socialism of the future and sensualism. To this Spann opposes his first and most important category of being, that of the whole, in which he sees the only correct attitude for metaphysicians and sociologists. The whole, according to Spann, has in itself no existence; it is, however, superior to its members: it comes into being with the members, but does not perish with them. Spann derives his other categories from that of the whole..... Spann derives all morality and all ethical values from this relationship of members, this ordered articulation of the whole and then, going over to economics, derives also the concept of equal importance or equivalence with which he tries in his later phase to supplant what he now considers the untenable theory of marginal utility". —Suranyi-Unger, *Economics in the Twentieth Century*, 1931, pages 31-33.

2. Economics is a Science because it consists of "certain facts connected together by certain *necessary relations called laws*."

The laws made by a State are commands. Economic laws are not commands; they are statements of economic tendencies and are true only under certain conditions.

The expression "natural laws" is used sometimes in a wide sense to include (a) the invariable laws of Physics, Chemistry and other physical sciences (b) the variable laws of many social sciences, laws which are not always true but which are true under certain conditions. Economic laws are true under certain conditions, and they are included within natural laws.

3. Sociology is the general science of society. It has different departments; and of these the two most highly systematised and developed are Economics and Political Science.

Indeed Economics is the most developed and exact of the social sciences; and this because Economics by its definite and exact money measurement is better able to measure its facts than the other sciences relating to society.

Economics has intimate relations with Political Science, Ethics and History.

The economist accepts psychological principles as his data rather than establishes them as his conclusions. Statistics are highly useful to him for suggesting empirical laws and for supplementing deductive reasoning.

2. Methods of Economics.

The methods of investigation and proof in Economics (as in most social sciences) are chiefly two—(1) the deductive and abstract method (a) the inductive and historical method.

The first method consists in deducing the laws of Economics from a few simple general laws about Nature, Man and Society; it infers the less general from the more general. The inductive and historical method is one of 'direct observation and generalisation from facts past or present,' it infers the more general from the less general facts and laws.

Both methods are useful in Economics. Each is wanted in its proper sphere.

The deductive method is simple, precise and within limits highly effective. The inductive method is in close touch with realities and moreover it does justice to the theories of the past.

Induction tests and corrects the foundations and conclusions of deduction. Deduction again completes induction.

3. Economic Schools.

Important economic ideas are found in the ancient world. Of special interests to Indians are the economic ideas of ancient India.

The Middle Ages of Europe had a well-organised economic system, condemning usury and believing in a 'just price' for everything.

New conditions have always given rise to new theories.

The first modern school of Europe was that of mercantilism. Its aims were political—trade and industry were minutely regulated for strengthening and developing the State. An excessive degree of importance was attached to money and the precious metals.

The Physiocrats opposed the Mercantilist idea of government regulation and advocated freedom of trade and industry. And they attached an excessive importance to agriculture.

Adam Smith, the father of modern English Economics, exposed the fallacies of Mercantilism and established the theory of free trade. He remains also one of the great theorists on taxation.

Two important modern schools are (1) the Classical or Deductive School using the deductive method, and (2) the Historical or Inductive School using the inductive method.

Socialism is a protest against private property and *laissez faire*, and it is an impassioned plea for more equitable distribution of wealth.

Sometimes according to the nationality of writers, economists are divided into the English School, the German School, the Austrian School and the American School.

The best recent writers make a welcome attempt to combine the merits and peculiar excellences of all schools.

Questions.

1. (a) Are you justified in calling Economics a Science? State and explain your reasons.

(b) Indicate carefully the Scope of Economics.

2. "Economic science is chiefly valuable, neither as an intellectual gymnastic, nor even as a means of winning truth for its own sake, but as a hand-maid of ethics and as a servant of practice." Discuss. (C. U. 1927 H.).

3. (a) What is an Economic Law? Can we say that Economic Laws are analogous to the Laws of Nature? (C. U. 1910).

(b) "The laws of Economics are to be compared with the laws of the tides rather than with the simple and exact law of gravitation" (Marshall). Explain.

4. Discuss briefly the relation of Economics to (a) Sociology (b) Political Science (c) History and (d) Ethics.

5. (a) Discuss the relative advantages and drawbacks of (1) the Deductive Method (2) the Inductive Method. What do you consider to be the proper method of investigation in the Social Sciences? (C. U. 1911).

(b) "In short, the true solution of the contest about method is not to be found in the selection of deduction or induction, but in the acceptance of deduction and induction." (Wagner). Explain.

6. (a) Mention some of the important postulates and axioms of Economics.

(b) As regards the postulates of (1) the transferability of labour and (2) the transferability of capital, point out the pre-requisites for the free circulation of labour and capital in a country. (C. U. 1910).

7. Write a note on the Mercantile System.

8. Write notes on (1) the Mercantile System (2) the Physiocratic School (3) the Socialist School.

CHAPTER III.

THE PRESENT ECONOMIC SYSTEM OF EUROPE AND AMERICA. STAGES IN THE DEVELOPMENT OF ECONOMIC SOCIETIES.

Some prominent features of Modern Economic Societies.

The modern economic system is found in its greatest development in modern England, Germany and other countries of Western Europe—and also in the United States of America.

India, China and certain other Asiatic countries are in a state of economic transition—they are passing from the old economic system to the new and are gradually adopting the new economic system now prevailing in Europe and America. Japan has already adopted this new and modern economic system to a large extent.

1. Private Enterprise and Government Activity.

In the present economic system of Europe (excluding Soviet Russia) and America production of wealth in agriculture, mines, manufactures, etc., and the distribution of wealth—all these are

very largely done by private individuals working on their own account. *The State* however helps in the production and distribution of wealth by securing the safety of life and property, by protecting labour, by providing educational institutions, good roads and harbours and in other ways.

In the modern economic system (the Capitalist System).

Private enterprise occupies a much larger field than State activity.

And the present system of private enterprise is based on

(a) *Private property, i.e.*, the exclusive control over valuable things by private persons.

(b) *Inheritance, i.e.*, the transmission of private property from one generation to the next generation.

There is at present a tendency towards limiting the right of inheritance to some extent, in the interest of society.

(c) *Contract, i.e.*, an agreement entered into voluntarily by individuals and enforced by the State.

Other features of modern economic societies are the following :

2. Highly developed Division of Labour and Exchange—Large-scale Production.

The development of economic society has been accompanied by an increasing division of labour, and increasing development of exchange.

In a primitive society, there is little division of labour, and little exchange—each family largely produces its own supply of food, drink, clothing, etc.

The greater the development of society, the greater is the division of labour ; and as each class of individuals takes part in the production of only one kind of goods, *e.g.*, hats or boots, or razors, etc., it has to procure supplies of other commodities by *exchange*. Under the present system of machine production in factories, the subdivision of labour is carried to a very great length,—the manufacture of the simplest thing, a pin for example, is split up into a large number of operations, each

being performed by a separate class of workers. And the modern economic system with its extensive division of labour and exchange has led to large-scale production in many industries (mining, many manufactures and most transport industries)—employing capital and labour on a large scale and producing for large (sometimes world-wide) markets.

This system of large-scale production reducing the masses of the people to mere wage-earners and placing them at the mercy of the capitalists and the employing classes—this is denounced as '*capitalism*' by the socialist critics of the present economic system.

3. Economic Freedom—fuller and more deliberate competition and co-operation.

—(1) The predominance of private enterprise based on the principles of private property, inheritance and contract, and also (2) division of labour, and (3) exchange—all these features of modern economic societies are also found more or less in the economic societies of mediæval and ancient Europe and Asia.

The fact which specially distinguishes the modern economic system from the economic system of earlier times is the great growth of Economic Freedom. Economic Freedom consists in choosing freely and deliberately and acting freely and deliberately in one's economic life, in the deliberate and free choice, the self-reliance and the habit of forecasting the future that characterise modern industry. This is Marshall's opinion.

Men are now free to move from one part of the country to another ; they are now free to adopt any occupation or profession they like ; they are largely free to produce and sell *what* they please, and *when* they please and at what prices they please. (See Page 68 on Economic Freedom). Men in an industrially progressive modern country like England or Germany are now free to do these things practically without much interference from the government or from old customary regulation. Economic Freedom of men, though very great at present, is not absolutely unrestricted. The principal limits imposed by the Modern State upon Economic Freedom are given at the end of this chapter.

In earlier times, industry was largely under the influence of custom, and was not characterised so much by Economic Freedom.

This Economic Freedom characterising modern industry leads to (1) *more competition*, and *more deliberate competition* affecting larger areas and greater lengths of time than in former times.

There is competition, among labourers, among capitalists, between labour and capital, among the different producers of the same thing, in the same country, and also in different countries, etc. As regards the production of cotton goods, steel goods and many other things, competition is world-wide now, it was not so in earlier times. (2) Also there is *greater and more deliberate co-operation* than the restricted, and customary co-operation of earlier periods. We now have the labourers of a nation engaged in a particular industry (e.g., the Cotton Industry of England) all over the country co-operating together in a labour organization to promote their common interests. This was not possible before the development of railways and telegraphs. We have now also deliberate international co-operation among producers in some cases and also deliberate international co-operation among labourers.

Thus it is extremely one-sided to regard competition as the most characteristic feature of modern industry—the most important feature is not competition but economic freedom leading to deliberate competition and deliberate co-operation and a great deal more of competition and also of co-operation, than in earlier economic systems. “It is deliberateness and not selfishness, that is the characteristic of the modern age.” (Marshall—Principles, Chapter I).

4. Monopoly.

Though competition is a very powerful factor in the modern industrial organization, there is a strong tendency towards monopoly specially in the United States. Business men try to protect themselves from the effects of the competitive struggle among themselves by securing a monopoly (1) sometimes by

obtaining control of natural privileges, and (2) sometimes by combining among themselves.

In the modern economic organization, *the action of Economic Freedom and of competition is as yet more extensive than that of monopoly*. The growth of monopoly is being accompanied by the growth of government interference in industry to control the evils of monopoly.

Competition.

In modern countries, competition among rival producers (and not the monopoly of one) is found in most manufacturing industries, in most mining—and practically in the whole of agriculture.

***Competition has its advantages and some disadvantages.**

(1) Competition among producers makes each one do his best. It makes the producers energetic, wide awake, efficient—it makes the efficient more efficient and weeds out the inefficient. (2) Also competition among the producers and sellers of a commodity gives the buyer some freedom ; he is not compelled to buy from a monopolist producer or to go without the thing. And this freedom is valued by human nature. Its supposed absence in the socialist state is an important objection against socialism. Moreover a great gain from competition among producers and

* "If competition in biology leads only indirectly to progress, competition in economics is the very secret of progress..... .. Competition in economic life..... is a potent factor in the growth of capital. Working hand in hand with the principle of private property, it is the chief incentive to progress. Through it we secure the extension of the margin of utilisation, the accumulation of the surplus available for human wants. Competition, moreover, is the great safeguard of society. It is the protection of the consumer against the high price which accompanies exorbitant profits ; for it is the automatic force which reduces the gains of the inefficient and makes profits depend on low, rather than on high, price. It evokes in individuals the fundamental characteristics of energy, thrift and power ; and it harmonises to a large extent the interests of the individual and of society, by making the success of one depend primarily on what he can accomplish for the other".—(Seligman--*Principles of Economics*, Book III.)

sellers is that it generally reduces prices for the buyers (consumers).

Now for the disadvantages of competition—Competition often leads to serious waste in connection with the production of commodities and services, and also in connection with their distribution within a large area. Two rival railway companies will sometimes construct railways through a district where one would have sufficed. Because of competition among producers, a country will sometimes have more cotton mills or iron mills than it requires—and there will be waste of labour and capital. It is because of competition that we have too many shops for selling food-stuffs and other things—the whole work could be done efficiently with fewer shops and much less labour and capital. If there were no competition, the expenses of advertising (at least the greater part) would be saved. The wastes of competition are its drawbacks from the social standpoint. Also of course competition has its disadvantages for the weak and the inefficient who are defeated in the economic struggle, and suffer greatly. But their loss is sometimes society's gain.

5. Custom.

The influence of custom in the modern economic system is much less than in ancient and mediæval periods ; and the *influence of economic freedom is now much greater than that of custom.*

Still custom continues to exercise an important amount of influence. Much of the expenditure of the richer classes, and of the middle classes, and to some extent of the comparatively well-off artisans—this is dictated by fashion (*i.e.*, custom).

Sometimes custom does good work in preventing hasty, rash changes and in protecting the weak ; but it very often obstructs true progress.

For fuller information as regards

the Right to private property, refer to the chapter on Socialism in Part II.

STAGES OF ECONOMIC EVOLUTION.

The fundamental institutions of the present economic stage have been discussed ; and a brief sketch of earlier economic stages in the economic history of mankind, will be useful and will throw light on the origin and the development of modern economic institutions.

Various classifications of economic stages have been proposed by different writers ; but a *classification sometimes used is one based on the increasing power of man over nature*, and this is here followed. [Other classifications of economic stages are based on the status of the labourer, on methods of exchange, etc.]

1. First Stage—taking things as they already exist, and not making them.

Man at this stage has not yet learnt to make things for his own use—he does not know how to pasture cattle, he does not know agriculture or manufactures. He lives by hunting, and by acquiring fruits, etc., which grow wild ; and so he has great difficulty in producing a regular supply of food. There is no private property in land ; and practically little division of labour. Wars are frequent.

2. Second Stage—The Pastoral Stage.

Men have now learnt to tame animals ; they keep large herds of cattle, flocks of sheep, etc., and so their food supply is much more secure than that of the people in the first stage.

People at this stage of economic evolution are *nomadic*—they have to move from place to place to get pasture for herds and flocks. There is *very little private ownership of land ; and little division of labour*. Wars continue to be frequent.

3. Third Stage—The Agricultural Stage.

At this stage men have acquired a large amount of control over the powers of nature—they have learnt agriculture, i.e., the art of making nature produce food crops for man.

Peoples at this period of economic development are not nomadic ; they settle down in a fixed territory which they cultivate for getting crops. Gradually the system of *private property in land* develops ; there is *some division of labour*. Europe and Asia, before the development of cities, and city industries were at this stage.

4. Fourth Stage—The Handicraft Stage.

This period implies the development of hand-made manufactures, and of towns where these manufactures flourish ; and of course agriculture continues to be an important industry. Europe from early times to the introduction of production by machinery, and India from early times till the present economic transition illustrate this stage of economic development.

This stage in Europe may be divided into two periods

(a) *The period of Local Regulation in towns by Gilds.*

There are two classes of gilds :

(I) *Merchant gilds*—each gild consisting of merchants regulating trade so as to keep it a monopoly for the merchants.

(II) *Craft gilds*—each gild consisting of the craftsmen (workers) employed in a particular industry. The craft gild laid down rules as to how the industry should be carried on, prohibited adulteration of goods, and night work, regulated weights and measures, and in other different ways attempted to protect the common interests of the craftsmen, and to promote fraternal feelings among them.

(b) *The period of National Regulation— the National or Mercantile System.*

Under the gild system, each gild regulated commerce or a particular industry within one particular town ; and this system of local regulation in each town was replaced in Europe during the course of the 16th, 17th and 18th centuries by a system of

national regulation by the central government of all trades and industries of the nation. The government of each state deliberately set itself to the task of supervising the *trade* and the *industries* of the country with the object of increasing the wealth and the military strength of the nation.

The system of national regulation is known as the mercantile system. (i) It attempted to secure a 'favourable balance of trade' by stimulating exports of commodities (except precious metals) in various ways,—the idea being that if there was an excess of exports over imports, the balance would be received by the country in precious metals, and thus a large supply of money would be secured.

(ii) The national system also regulated the *industries* of the nation very minutely—it regulated rules of apprenticeship, rates of wages and prices, and made provision for poor relief. The state also often granted monopolies for foreign trade with particular countries, and also monopolies in the production and sale of particular things (*e.g.*, salt, iron, cords, oil, etc.) within the country.

India passed through these earlier stages of industrial evolution long before England, France, Germany or other countries of Western Europe, and it is only in the course of the last two centuries that India has been outstripped in the industrial race. In fact India had local and even national regulation of industries more than two thousand years ago (this is proved by unimpeachable records accepted even by European scholars)—when England, France and Germany were steeped in darkest ignorance and primitive savagery.

In India we find the idea and practice of local regulation of industries in towns in the Hindu and Moslem periods, and to a smaller extent surviving even in later times; national regulation of industries was practised with great minuteness and detail in the days of Chandragupta (a contemporary of Alexander the Great) and in later times whenever strong and powerful governments were established—but in India, political cohesion being often weak, local regulation has been more persistent and continuous in operation than national regulation.

5. Fifth Stage—The Industrial Stage (the present economic system).

This stage consists in *replacing largely hand-manufactures by power manufacture (i.e., manufacture by machinery propelled by steam power, electric power, etc.) ; and in establishing the new organization of industry, i.e., production under the leadership of capitalist employers in factories employing large numbers of wage-earning labourers, and large quantities of capital.*

England, France, Germany, Italy, the United States—they are now all at this stage of economic evolution. England was the first country to reach this degree of development ; and her example was followed by the other countries. *India is also now entering upon this period of her economic history ; and she will yet take some time,—perhaps another generation,—to complete her industrial revolution.*

The *new factors* which started the Industrial Revolution in England in the middle of the 18th century, and made England adopt the Industrial Stage—these were (1) mechanical inventions relating to spinning and weaving made by Arkwright, Hargreaves, and also other inventions ; (2) the growing use of water and steam power in the place of hand and foot power ; and later on (3) the use of steam power in transporting goods and men by land and by sea which by increasing the mobility of goods and labour greatly furthered the progress of the Industrial Revolution.

Transition to the Modern Industrial Stage—The Industrial Revolution.

(1) *The Development of Machinery and the Establishment of the Factory System. Increase in efficiency of production.*

As the new machines worked by steam power were expensive, the workmen could not now work in their own homes. Factories were established, each factory containing a large quantity of expensive machinery owned by the *capitalists*, and the workmen in the factory became simply *wage-earners* with-

out any other interest. *This division of society into capitalists and wage-earners with antagonistic interests has led to very important results.*

Under the factory system, on account of its superior efficiency due to machinery and the economies of large-scale production, *production of wealth has immensely increased.*

(2) Expansion of Markets and growing Division of Labour.

The great efficiency in the production of wealth under the modern factory system and the development of facilities of communication (railways, steam navigation, etc.) made it possible for England to supply immense quantities of manufactures to other countries of Europe and even to Asia and America. *Thus the market for English manufactures which was at first national and confined to England, was extended and became almost world-wide.*

The evolution of the Factory System and the expansion of markets have been accompanied by a great increase in the *division of labour.*

(3) Competition and laissez faire—Economic Freedom.

As noted already (Page 60) Economic Freedom is the characteristic feature of modern economic societies. The growth of Economic Freedom owes much to the Industrial Revolution.

One of the most important effects of the progress of the Industrial Revolution in England was the change as regards the policy of the government towards industries. *The old policy of national regulation, of regulation of trade and industry by the government was clearly not suited to the new conditions established by the Industrial Revolution,—and so it was gradually abandoned. Labourers were now allowed freely without interference from government to move from place to place and go to those parts where they were wanted and where they would get the highest wages ; capital also became more*

mobile—and the government abstained from interfering with it and began to follow the policy of *laissez faire* (let things alone, i.e. non-interference by government). Thus the regulation of labour and capital and production by the government was given up ; and also the attempts to regulate prices and wages ; and sometime after, a few steps were taken to free foreign trade to a certain extent from government regulation.

This policy of *laissez faire* on the part of the government meant an immense increase of *Economic Freedom* as regards the employment of labour and capital in production, and increase of competition because labourers and capitalists were now free to compete—and also increase of co-operation.

The theory of *laissez faire* (i.e. non-intervention by the government in industry and trade) was powerfully advocated by Adam Smith and his followers. They maintained that industries and commerce flourished best under a system of natural liberty, without interference from government.

The new industrial system established in England after the Industrial Revolution greatly increased the production of wealth ; and this wealth enabled England to fight persistently

* For a short sketch of the history of the growth of *Economic Freedom*, refer to Marshall's *Elements of Economics*, Book I, Ch. II, also Marshall's *Principles*, Appendix A.

(On this subject of Marshall's presentation of Economic History there was an interesting controversy between Prof. Marshall and Prof. Cunningham in the pages of the *Economic Journal*).

There was little economic freedom in the early civilisations of Egypt, Babylonia, China which grew up on the banks of great rivers in warm climates. The manual workers were practically serfs and slaves ; and custom was their great protector against oppression.

Among the ancient Greeks and Romans, industry was very largely in the hands of slaves ; and so in Greece and Rome, also there was not much of Economic Freedom. In Imperial Rome, as regards commerce, in certain respects there was great freedom. The tone of business life was however degraded by the public disdain for it. There was some amount of Free Industry and Enterprise in the industrial towns of the Middle Ages. Holland, for a time became the leader of industrial progress in Europe ; and about the middle of the 18th century industrial leadership passed to England.

In England after the Industrial Revolution, Economic Freedom attained a great development ; and then the spirit of Free Industry and Enterprise spread from England to other countries which developed their industries following the example of England.

and with ultimate success against Napoleon. This was an immense gain.

But the condition of the people in England was far from satisfactory. The war with France, the heavy taxes on account of the war, and the high price of food due to failure of harvests at home and the high taxes on foreign corn—all these severely pressed upon the people.

The period of Transition—Evils attending a sudden increase of Economic Freedom.

The sudden increase of Economic Freedom during the Industrial Revolution in England led at first to serious evils. The employer in the factory and in the mine, very generally sacrificed the health and well-being of his work-people to his own desire for making money quickly. He made his labourers work excessive hours under unhealthy conditions, physical and moral; and even women and children were worked for long hours under such conditions. The health of the workers suffered terribly, their efficiency as workers was diminished, and so their wage-earning power was also lowered. Not only their physical efficiency suffered, they also suffered mentally and morally. They had no opportunity and leisure for education, for the exercise and development of their intellectual faculties, and morals among them sank to a frightfully low level. The decline in the physical, mental and moral qualities of the labouring population, was an incalculable loss to themselves and to the nation as a whole.

England was the first country to pass through this economic transition and was followed by France, Germany, the United States, etc.—India is yet in this stage of economic transition, she has not yet passed through it, and she is suffering seriously from the evils of this transition period.

Improvements in Transportation and Effects.

The great improvements in transportation during the nineteenth century have given immense scope to one form of division of labour—the geographical division of labour.

In mediæval and early modern times, those articles only could be sent to any long distance which had great value in small bulk. Such were spices, fine silks and cottons, expensive weapons and armour, gold and silver. These were used chiefly by the rich ; trade in them did not affect the vast majority of the population. Where water transportation was available, there was some trade and exchange in the bulkier commodities. . . . But the most far-reaching and extensive development of the geographical division of labour came with the railway ; for the railway can penetrate all parts of the country. Then came the steamship. And the industry of almost every part of the world has been mightily transformed.

* "The United States at the present time presents what is probably the most extreme case of geographical division of labour highly developed under the influence of cheap transportation. The southern part of New England is a manufacturing hive, the food and raw materials there used come from all parts of the world. The wheat and other bread-stuffs come from the Mississippi and Missouri valleys ; the meat and animal products from the same regions and some regions further west ; the cotton from the southern states ; the wool from the trans-Missouri regions, Australia, Argentina, China, Siberia. All sorts of manufactured articles are sent from New England in exchange—cotton and woolen fabrics, boots and shoes, metal wares, tools and machinery. . . . No part of the country is self-sufficing ; each is constantly sending its products to distant regions, and in return receiving the products of distant regions.

An example no less striking of the geographical division of labour is to be found in the present condition of Great Britain. That country now imports the greater part of its food—four-fifths of its bread-stuffs, and more than half of its meat and other food supplies. Its wheat comes chiefly from the United States, Canada, Russia, Argentina ; its meat very largely from the United States and Australasia. All the cotton and almost the wool which serve to clothe its people are brought from other countries. These various commodities, as well as

* Taussig—*Principles of Economics*, Vol. I. 1925, pages 43-44.

the others which come from the tropical regions, are obtained in exchange for a great range of manufactures exported. The people of Great Britain by devoting their labour chiefly to manufactures and exchanging them for the imported food-stuffs and raw materials, get vastly larger returns than they could by producing everything at home."

Present Reaction against laissez faire.

The evils attending the sudden increase of Economic Freedom after the introduction of machinery and some of the evils of economic freedom even at subsequent stages,—these have led to a strong reaction against the policy of extreme *laissez faire* in England* and in almost all industrial countries. *The necessity for restricting Economic Freedom specially in the following directions is now recognized by the best economic writers.*

(1) Protection of Labour.

(a) by Government action.

Almost every progressive Government now imposes the following restrictions on Economic Freedom for the protection of labourers, *viz.*, laws providing for (i) sanitation in factories, (ii) fencing in of dangerous machinery, (iii) a minimum age and schooling age for children, (iv) limitation of the hours of work for women and children, and (v) the liability of employers to give the workman compensation in case of accident.

(b) by the action of labour organizations.

The voluntary labour organizations established by the labourers themselves (*e.g.*, trade unions, etc.) are also doing much to improve the condition of labourers as regards conditions of work, wages and other things by *collective bargaining* with the employers. This collective bargaining, though it implies in theory a restriction on individual freedom of labourers, in practice is highly beneficial to the labouring class.

(2) The extension of Public Enterprise. The reaction against the policy of laissez faire (i.e., non-interference with industry by the government) is also indicated by the growth of industries under the management of the government. The

government in many countries manages the postal savings bank, the telegraph and railways, etc., and municipalities (forming part of the local government organization) manage tramways, street railways, gasworks and water-works, etc.

(3) *The protection of buyers* by a government inspection of the quality of goods.

It was believed by the advocates of the *laissez faire* theory that the best thing for the buyers was economic freedom and if the people were allowed to buy and sell what they liked, they would buy the right goods and would reject the bad ones. Experience however has disproved this. Men always have not the knowledge which would enable them to decide what are the right goods, and what goods are inferior, adulterated and unwholesome. So a *government inspection of goods, and a government mark* on the right goods are of the greatest help and protection to the buyers.

CHAPTER III.

Summary.

1. The main features of modern economic societies are the following :

(a) Private enterprise based upon the system of private property, inheritance and contract—this is the general rule in most modern businesses, in industry as well as in commerce.

(b) Government activity in certain directions, helping the production and distribution of wealth in many ways.

(c) Economic freedom—competition and co-operation both on a much larger scale than before.

Custom has still much influence on economic life e.g. fashion. And there is a strong tendency to monopoly in certain industries and under certain conditions.

2. The successive stages of industrial evolution are variously given by different writers.

First comes the direct appropriation of things—uncivilised man finds things, instead of making them. Then comes the pastoral stage ; next comes the agricultural stage ; then the stage of handicrafts ; and last of all the modern industrial stage when men make things by machinery.

3. The Industrial Revolution began in England towards the end of the 18th century. Agriculture and manufactures were revolutionised and transportation facilities were greatly increased. The establishment of the factory system, and of machine production, and an immense increase in Economic Freedom are some of the results of the Industrial Revolution.

Questions.

1. Describe the main features of present-day economic societies (C. U. 1913).
 2. "Competition is neither wholly bad, nor wholly good." Amplify. (C. U. 1926).
 3. (a) Trace the successive stages of industrial evolution. (C. U. 1900).
(b) Give a short sketch of the Industrial Revolution and indicate its effects.
 4. Describe some of the effects of the great improvements in transportation during the nineteenth century.
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CHAPTER IV.

DIVISIONS OF POLITICAL ECONOMY.

There is some difference of opinion among economic writers as to the exact manner in which Economics should be divided into branches for the purpose of study.

Economics may be divided into the economics of

- (1) *Consumption of Wealth or Demand.*
- (2) *Production of Wealth or Supply.*
- (3) *Exchange or the equilibrium of Demand and Supply.*
- (4) *Distribution or the sharing of Wealth among the classes co-operating in the production of wealth.*

The economics of *Production* deals with the actions of the members of a society, engaged in the production of wealth. What is produced annually is known as the National Dividend. The economics of *Consumption* deals with the laws of Demand, the motives affecting the demand for wealth, and also with the effects of Consumption on Production and other forms of economic activity.

The economics of *exchange* deals among other things with the problem of value, why some things have more value than other things, how values are affected by the different conditions of Demand and Supply. The economics of *Distribution* refers to the division of the wealth that is produced into wages, interest, profits, rent (which are the shares of the different classes engaged in the work of production), and the laws by which they are determined and so forth.

The Relation of the State to Industry and Public Finance (Public Expenditures and Public Revenues) may be regarded as other departments of Economics.

The different departments of Economics are closely inter-related; and the economic processes described are all going on at the same time continuously. Wealth is distributed, for instance, as it is produced. The product is a flow and never a fund.

• Before we begin to discuss in detail each of these branches of Economics, it will be necessary to have clear and adequate ideas about the *fundamental concepts* which we shall have to use again and again in our economic reasonings. Without understanding properly these fundamental concepts, it will be impossible for the student to follow intelligently the scientific discussion of economic questions.

CHAPTER V.

SOME FUNDAMENTAL CONCEPTS IN ECONOMICS.

Economic terms are taken largely from the language of everyday life with suitable qualifications and explanations.

Economics is the study of man's actions in the ordinary business of life, and so Economics has to use many of the terms commonly used by men in the ordinary affairs of life. Some of these terms are 'Wealth,' 'Value,' 'Goods,' 'Capital,' and 'Income.'

Now each of these words as commonly used has different shades of meaning, and this often leads to confusion and vagueness. So if we are to use these words accurately, without confusion and inconsistency for the purpose of the Science of Economics, we must define clearly the meanings of these words and we must also add where necessary a suitable special qualifying word or clause to a particular word to indicate in what special sense the word is used. For example, the word 'capital' is commonly used to indicate different meanings; but in the Science of Economics an attempt is made to define the word 'capital' clearly and 'capital' preceded by the qualifying expression 'individual' (individual capital) is used in one distinct sense, the word 'capital' preceded by the qualifying expression 'social' ('social capital') is used in another distinct sense, and so on.

Thus Economics takes the familiar terms of every-day life (e.g. wealth, value, capital), uses them as far as possible in the way they are commonly used, and to secure accuracy, clearness and consistency, adds suitable qualifying expressions and explanations to these words where necessary. "Economists must take as the standard use of these words, that which seems most in harmony with every-day usage in the market place; and they

must add a little special interpretation wherever it is necessary." (Marshall).

This chapter is taken up mainly with the *definitions** of economic terms, and their classification.

IMPORTANT TERMS IN ECONOMICS.

Economics in its †*present* form is chiefly concerned with *scarce* goods (wealth)—goods limited in supply. So we have to define *Goods*, and *Wealth*. And *Wealth* from the individual standpoint and also *National Wealth* will have to be considered.

To produce *Wealth* Man requires the aid of *Capital*. So *Capital* will have to be considered—*Individual Capital*, also *Social Capital*. And the relation of *Capital* to *Income*.

In modern communities, the wealth (*viz.*, agricultural products, minerals, manufactures, etc.) produced is largely exchanged, bought and sold in markets and so *Value* and *Price* have to be defined and explained.

The National Income is divided into four shares—*Wages*, *Interest*, *Profit* and *Rent*, and correct ideas have to be formed about them.

Goods, Wealth, Value.

Goods—Anything that is desirable, anything that can satisfy a human want is a *good*. Water, air, bread, a hat, a

* On this subject, Sidgwick has wisely remarked that the *value of definition* lies not so much in the result obtained in set forms of words, as in the discussions that lead up to them. "They (certain economists) under-rate the importance of *seeking* for the best definition of each cardinal term, and they over-rate the importance of *finding* it" (*Principles of Political Economy*, Book I, Chap. II).

† Economics in the near future may concern itself to an important extent also with goods unlimited in supply. As Professor Boucke suggests in *A Critique of Economics*, "Economics should be regarded, not as a catallactics or plutology, but as the systematic study of all facts bearing upon relations of *weal* and *wealth*, whether this concerns scarce or plentiful goods."

cigar, filial affection, the love of friends—each of these satisfies a human want and is therefore a good.

1. Goods are either

(1) *Material goods*—which include (a) material things *e.g.* water, air, agricultural products, manufactures, minerals, machinery, etc. ; (b) advantages from material things or rights to receive them now or in some future period, *e.g.* shares in private partnership business, and joint-stock companies, copy-right, patent right, mortgages, etc.

(2) *Non-material or Personal goods*—which are either (a) *internal* to a man, his own faculties and qualities for action and enjoyment, *e.g.*, his business ability, professional skill, his power to appreciate good literature or painting or sculpture ; (b) *external* to him, and rising from his relations with other men, *e.g.*, the good-will of his business.

II. Again goods from the point of view of exchange are—

(i) *Transferable, i.e.*, capable of being bought or sold, *e.g.*, agricultural products, shares in companies, good-will of a business, etc.

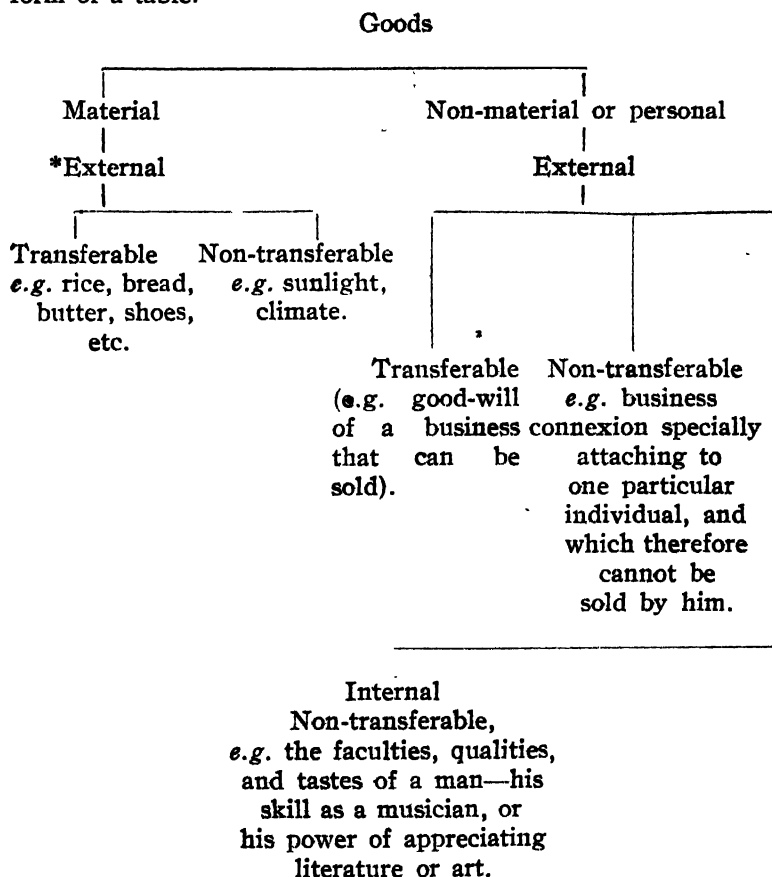
(2) *Non-transferable, i.e.*, not capable of being bought or sold, *e.g.*, the internal qualities of a man, sunlight, climate, etc.

III. Then goods are—

(1) either *free goods* which are freely given by Nature without the labour of man, which are not owned and appropriated, *e.g.*, land in a new country is a free good to the individual, but not land in a settled country

(2) *Appropriated goods*—*e.g.*, goods which can be got only by the effort of man (*e.g.*, agricultural products, manufactures, etc.) and which have been appropriated by man.

The classification of goods can be conveniently put in the form of a table.



IV. From the point of view of consumption and production, goods are divided into *consumption goods* and *production goods*. From some forms of wealth, *e.g.* from food on the table, from the clothes we are wearing—we derive enjoyment directly. These forms of wealth are *consumption goods*.

* It is obvious that material goods cannot be internal to a man—material goods are always external.

Other forms of wealth, *e.g.* land, the machinery within a factory, or a reaping machine in a farm do not yield enjoyment directly—they help to produce things which we can enjoy. These forms of wealth are *production goods*.

Production goods again can be divided into two classes ; *viz.*

- (1) *Land* which is a free gift of nature to man.
- (2) *Capital goods (or capital)* *e.g.* machinery, factory buildings, raw materials, etc., which are not the free gifts of nature, but which are produced by man, and are afterwards used by him in the work of production.

Wealth.

Earlier writers defined Economics as the science of wealth. Current economic thought has shifted the emphasis from Wealth to Man. Economics is all about Man, in relation to Wealth. And what is Wealth?

On this, as on many other important questions, economists are not quite agreed among themselves.

The word 'wealth' is used in many different senses.

- (1) * 'Wealth' in its widest sense is taken to mean all 'goods'. Everything is wealth that has utility and can satisfy

* Wealth=utility. In some ways this will be the satisfactory idea about wealth. Suppose in India, the supply of clothing for every man is increased two thousand times. But the utility or satisfaction derived from this increased quantity of clothing may be only three times as much as the previous utility—and not two thousand times as much as the former utility. So in a real sense the wealth of the people (utility to the people) as regards clothing, has increased only three times, though the quantity of clothing (commodities) has increased two thousand times. In this sense the increase in the wealth of the people is not in proportion to the increase in the quantity of commodities. Also with two thousand times increase in the supply of clothing, the price of clothing may fall to nil—under the assumption that the clothing is produced by some supernatural process without cost. So the total money price of this vastly increased supply of clothing will be nil. The utility of the increased clothing is thrice the previous utility, wealth in that sense has increased thrice, but money price has fallen to nil. So the increased wealth is not in proportion to money price. This is an extreme and imaginary case. But it suggests conclusions not without their uses in the actual life of nations.

Refer to Henderson, *Supply and Demand*, Chap. X, also *Memorials of Alfred Marshall*, pages 366-67.

a human want. Every commodity (air, wheat, salt, diamond, etc.) having utility and satisfying human want is wealth. Every service rendered by human beings (doctors, actors, domestic servants, etc.) having utility and satisfying human want is wealth.

Or rather wealth=utility (utility of commodities, also utility of services).

(2) Wealth consists only of those things that satisfy human wants and are limited in quantity, whether they are results of human effort or are free gifts of nature. Here the essential idea is *utility plus limitation of quantity* (Taussig).

(3) Wealth is also used to include only *material objects owned by human beings and external to the owner*. Here the essential idea is that of *ownership*. Utility is implied in ownership, without utility a thing would not be owned. Material objects which are owned are limited in quantity. This meaning of the word wealth excludes (a) immaterial objects, (b) and also material objects which are not owned, e.g. the Gulf Stream, rain, wind, the heavenly bodies (Irving Fisher).

(4) The word wealth is used in a restricted sense by some writers to mean goods which are

(a) material

(b) and exchangeable. The attribute exchangeability involves (i) utility (ii) limitation in quantity (iii) transferability and ownership.

This definition of wealth excludes (i) non-material goods (ii) and material goods that are not exchangeable.

The connection between *wealth* and *wants* must not be missed. A book or a piano is wealth to a civilised man, it satisfies a want ; it is not wealth to a savage. Sand is wealth to the building contractor in a city ; it is not wealth in the desert of Sahara.)

Thus wealth always consists of goods—the definitions of wealth differ in this, that one definition includes all goods, a more restricted definition includes fewer goods, and so on. *Wealth consists of goods, and every good has utility ; the attribute of utility is always present in every definition of wealth*

—as regards the other attributes of wealth, the definitions differ more or less.

The definitions of wealth are numerous and from very different standpoints. How to decide between them? What definition is the most convenient? *It would be better to have two definitions (A) to give the word 'wealth' a somewhat restricted sense when speaking of 'individual' wealth, and (B) to give it a much wider sense when referring to 'national wealth.'* Individual wealth may be taken to include goods having the attributes of (a) utility (b) limitation in quantity (c) transferability—it includes goods material and also some immaterial goods external to a man. Free goods in unlimited supply and non-transferable goods are to be excluded. National wealth may be taken to include even non-transferable goods, goods not limited in quantity and free goods, e.g. the industrial qualities of persons, the dykes of Holland, climate, water power, rivers like the Thames and the Ganges, the falls of Niagara and the well-ordered organization of a free and noble state.

A brief sketch of the opinions of some leading writers as to the meaning of the word 'wealth' in Economics is given below.

Marshall.

Prof. Marshall uses the word 'wealth' in (A) a narrow sense (B) and a broader sense.

(A) In the *narrow sense* a man's 'wealth' includes

(i) *material goods* to which he has rights of property, which are transferable and exchangeable, e.g. land, houses, machinery, etc., and also his shares in joint-stock companies, mortgages and other obligations which require others to pay money or goods to him and (ii) *non-material external goods* (excluding non-material internal goods).

Of course only those non-material external goods are included in his 'wealth' which are the means of enabling him to acquire material goods. Examples of such non-material external goods are (a) the good-will of a man's business, (b) the business connection of a doctor or a lawyer.

Wealth in this sense includes all these things external to a man which (a) belong to him alone and are not shared by him with others (b) and are directly capable of a money measure.

This sense of the term wealth is in harmony with the usage of ordinary life.

(B) Prof. Marshall points out that a *broader view of wealth* may be taken for some purposes so as to include personal wealth in addition to the other forms of wealth already enumerated. He uses the term (***personal wealth** ~~to~~ includes internal goods, those energies, faculties and habits which directly contribute to making people industrially efficient); together with those business connections and associations of any kind, which we reckon as a part of wealth in the narrow sense of the term.

Marshall is of opinion that '*wealth*' *simply* should always mean "*external wealth only*," i.e., if the word '*wealth*' is used by itself without any qualifying adjective, it should be taken in the narrower sense.

Ely.

Prof. Ely notes (i) that the word '*wealth*' is used by some writers to include free goods as well as economic goods, and (ii) the term '*wealth*' is used by others to include economic goods only, thus excluding free goods. Ely points out that from the *individual standpoint*, wealth means valuable claims to goods; and from the *social point of view* we shall regard wealth as an aggregate or stock of goods. This excludes personal services from the category of '*wealth*,' for personal services disappear as soon as they are rendered.

Gide.

After a short discussion, Prof. Gide resigns himself to

* Seligman in his *Principles of Economics* objects to this conception of *personal wealth*. "Man cannot part with these qualities; he can only embody them in some product which will be serviceable to others. His personal qualities may thus enable him to acquire wealth, but they do not themselves constitute wealth..... Wealth exists for man, but man himself is not wealth (unless indeed he is a slave, and then he is wealth, not to himself, but to some one else)..... The things that form wealth are always outside of man; they are external, not internal, phenomena."

using the word *wealth* to mean "anything of the nature to satisfy an economic desire." Such a definition of wealth naturally includes material as well as immaterial forms of wealth. (Archibald's edition of Gide's *Political Economy*, p. 41).

[In a footnote he notes 'that most economists to-day are inclined to include under the name *wealth*, immaterial as well as material products.']

The *services* of the doctor, the professor, the judge, the musician and the artist—are these to be regarded as forms of wealth? Prof. Gide seems to think that they are wealth as they satisfy human wants.

Taussig.

Prof. Taussig uses the word '*wealth*' to mean only all* '*economic goods*'—Taussig excludes free goods from his category of wealth. A free good is a good of which there is an unlimited supply so that each man may have as much of it as he likes and the result is that no economic problems rise in connection with free goods. Air, sunshine, climate are examples of free goods.

Water, so long as the supply is unlimited, is a free good ; but when the supply of water is limited as compared with the demand, as in a town, water then becomes an economic good.

Wealth meaning all economic goods includes (a) all things which satisfy human wants and which are the results of human effort and thus limited in quantity, (b) also all free gifts of nature satisfying human wants if they are limited in quantity, though they are not the results of human efforts.

For Taussig, *wealth thus includes everything which satisfies a human want and is limited in quantity.*

Seligman.

"To recapitulate, in order to constitute wealth, a commodity must have four qualities. First, it must possess utility :

* An economic good is a good of which the supply is limited relatively to the demand—scarcity relatively to the demand is the ear-mark of an economic good. (Taussig).

if the thing is of no use, it is not a good at all. Secondly, it must be appropriable. Thirdly, it must be external; a man may be skilful, but he is not wealthy until he has transmuted his skill into some actual result. Fourthly, it must be limited in amount, if it is free to all, it may make him happy, but its possession will not differentiate him from his neighbour, and he will attach no specific value to it.

Since modern society is based on the interchange of possessions, all this can be summed up in the statement that wealth is now-a-days anything that can be exchanged. If it is not useful, no one will want it; if it is not appropriable no one can get it; if it is not external, no one can part with it; if it is not limited in quantity, no one will give anything for it. Historically and fundamentally, however wealth is anterior to exchange."

Mill.

John Stuart Mill in his famous *Political Economy*, a book which was the standard treatise for a generation, gave the word wealth a comparatively limited sense.

'Wealth' he wrote 'may be defined as all useful or agreeable things, which possess exchangeable value, things which cannot be obtained in the quantity desired without labour or sacrifice.' So Mill in this definition of wealth *would include only goods having exchangeable value*—other kinds of goods being excluded.

1. Wealth of an individual.

A man's wealth (when spoken of simply) is supposed to consist of two classes of goods:

(i) Those *material goods* to which he has private rights of property and which are therefore transferable and exchangeable, e.g. land, buildings, shares in companies, etc.

(His debts are negative wealth and must be subtracted from his total possessions, and then we shall have his *net wealth*).

(ii) Those *immaterial goods which are external* to him and which help him to acquire material goods, e.g., the good-will of

his business, the professional connexion of a doctor or a lawyer, *etc.*

Immaterial goods which are internal (*e.g.* a man's personal qualities and faculties even when they help him to acquire material goods) are excluded when calculating the wealth of an individual.

[The wealth of an individual consists (a) partly of *wealth which belongs to him alone*, and is not shared by him with his neighbours or other persons. It must be also noticed that a man has many goods which are common to him and his neighbours—those goods constitute (b) *the individual's share of the common wealth*. The individual's share of the common wealth includes the right and opportunity to make use of public property and institutions of all kinds, *e.g.* roads, gas, right to free education or to old-age pensions in countries where such rights exist.

'Other things being equal, one person has more real wealth than another man, if the place in which the former lives has a better climate, better roads, better water, more wholesome drainage; better newspapers, books and places of amusement and instruction, *etc.*

Many of these things are (**collective goods**, *i.e.* goods which are collectively owned and which are not in private ownership. And this brings us to the subject of *National Wealth*.)

II. National Wealth.

In calculating the national wealth of a country we have to take note of the following elements:

(1) (National wealth includes the sum of *the wealth of all individuals* who are members of the nation. It includes the individual as well as the collective property of all these members.

(2) National wealth includes *public material property* of all kinds, *e.g.* public buildings, public parks, municipal gas-works and waterworks, *etc.*

(3) In estimating the national wealth of a nation (and specially when we are going to compare it with the wealth of other nations) we must include *free goods*. The Ganges has greatly added to the wealth of India by facilitating transport, etc., and so it is part of the national wealth of India. The Thames is similarly part of the national wealth of England.

(4) German economists pay great attention to the *non-material elements of national wealth*. The organization of a free and well-ordered state is regarded as an important non-material element of national wealth.

The faculties and energies of the people which help to make the English nation richer and industrially more productive than many other nations (*e.g.* Indians, Turks, Persians, etc.)—these faculties and energies may well be included within the national wealth of England.*

* (5) Business connections and trade reputation add to the national wealth.

A satisfactory organization of credit increases the efficiency of production in a country, and thus adds to the wealth of the nation.

III. Cosmopolitan Wealth.

Cosmopolitan Wealth is the wealth of the world as a whole. As good navigable rivers are important elements of national wealth, so the ocean is one of the most valuable elements of cosmopolitan wealth. As national wealth includes the whole wealth of the nation (individual as well as collective), so cosmopolitan wealth includes the whole wealth of all nations taken together.

Scientific knowledge, wherever discovered, soon becomes known to the entire civilized world—scientific knowledge is thus peculiarly cosmopolitan wealth, it cannot be considered specially the wealth of any particular nation.

Value, Price.

The idea of Value is closely connected with that of Wealth and so something about value may be said here.

The term Value is used in two different senses.

(1) *Value in use* of a thing i.e. the utility of any particular thing. Air is more useful to a man than a diamond.

(2) *Value in exchange* of a thing i.e., the exchange value of that thing in terms of another thing at any particular place and time) is the amount of the second thing which can be got there and then in exchange for the first. Here the word 'value' is relative, and expresses the relation between two things at a particular place and time.

The 'value in use' of any thing is often greatly different from value in exchange. *Air has very great value in use or utility, because a man cannot live without it; but air, at present, has no value in exchange, because we cannot get any thing in exchange for air. A diamond has great value in exchange, we can get many things in exchange for a diamond; but it has little value in use, it is not of such great use to man as air or food.*

If the value in exchange of any commodity (e.g., cloth) is not expressed in terms of any other commodity (e.g., wheat or rice, etc.), but is expressed in terms of money then we have *price*. If one yard of cloth is exchanged for two rupees in money, then we say that the price of cloth is two rupees per yard.

*Wealth. Capital and other forms of Wealth.

Wealth consists of

* Prof. Marshall's views on wealth and capital are of importance to every student of economics. His final position is stated thus in a letter to Prof. Cannan in 1898.

"..... You and Fisher hold that wealth is a stock and a flow; but capital is only a stock.

I take wealth to be a stock only.

So far it would appear that the difference between us is only as to the use of the word "wealth". I can see no advantage in your use; but the matter does not strike me as important, so far.

But I think there is something of more importance behind. I take it we are all agreed that "capital" from the individual point of view, must be used in the common business way; more or less on the lines of what I have called trade-capital; and that it has no scientific justification; that therefore the discussion is all about "capital in general" or "capital from the social point of view."

(1) **Consumption goods* which we consume directly, from which we derive satisfaction directly, *e.g. clothes, food, and drink* upon the table ready for consumption.

(2) *Production goods* which we cannot consume directly, but which help to produce the goods that we can enjoy. *Machinery* for the manufacture of cotton cloth, a *plough* for

Assuming that, *I want to adhere to the line of division between "Land" or "Free Goods," and "Capital."* I can't be sure that you and Fisher do.

..... Now that I have dotted my i's and crossed my t's; and my position is this:

Capital (in general) is a stock.

Wealth is a stock.

But (i) capital does not include "free goods"; this is a matter of principle.

(ii) Capital does not include those trifles, the income from which is neglected by ordinary people and income-tax collectors. This is a matter of convenience.....

(iii) Though in England (not perhaps in France) wealth and capital consist for the greater part of the same goods, yet when we use the term "Capital" we are always thinking of the "productiveness" and "prospectiveness," which mainly affect the demand for and the supply of wealth.....

This interesting letter is included in Prof. Pigou's *Memorials of Alfred Marshall*.

As Marshall hints above, certain economists (Clark, Fisher, Seligman and others) do not maintain a line of division between Land (or Free Goods) and Capital—they include Land as a form of capital.

"Many authors restrict the name *capital* to a particular kind or species of wealth, or to wealth used for a particular purpose, such as the production of new wealth; in short, to some specific part of wealth instead of any or all of it. Such a limitation, however, is not only difficult to make, but cripples the usefulness of the concept in economic analysis.

..... The only true capital of a society as a whole is its capital-wealth,—its *lands*, railways, factories, dwellings, and in its broader sense its human inhabitants also....." (Fisher—*Elementary Principles of Economics*).

"*Land will be called, in our study, a capital good, for it is a form of wealth, which produces other wealth. It enters into the permanent productive fund that society is using*" (Clark—*Essentials of Economic Theory*).

"Capital as contrasted with income, therefore, is *all wealth* regarded as a store or fund." (Seligman—*Principles of Economics*).

* *Consumers' goods* (or *direct goods*) are also called goods of the *first order* as they yield satisfaction directly. *Producers' goods* (*indirect goods*) include goods of the *second order*, and *higher orders*. A good of a higher order than another means a good more indirectly connected with the creation of satisfaction. A machine for making another machine is of a higher order than the machine it makes.

the production of crops, *land* without the help of which man cannot produce crops—all these are *production goods*.

(*The distinction between consumption goods, and production goods is not a hard and fast distinction, the same thing may be a consumption good from one point of view and it may be a production good from another point of view. Suppose an employer has a stock of food and clothes for his labourers—the food and clothes will be consumption goods for the labourers, but they will be production goods from the point of view of the employer*).

Production goods are again divided into

- (1) Land and other free gifts of Nature.
- (2) *Capital goods which are produced by man* e.g., machinery, factory buildings, railways, ships, raw materials, etc.

Thus capital goods constitute a part of the wealth of the community.

Prof. Marshall remarks :

“We should speak of *Wealth*, when considering things as *results of production*, as *subjects of consumption*, and as *yielding pleasures of possession*” and “We should speak of *capital* when considering things as *agents of production*.”*

The *chief demand for capital* arises from its *productiveness*, from the help it renders in the work of production ; and the *supply of capital* is regulated by the fact that men to accumulate capital must act *prospectively*, i.e. must wait and save and thus *sacrifice the present to the future*.

* Prof. Chapman puts it in this way : “*The distinction between capital and other wealth becomes fundamentally a psychological one*”. It is the use or intended use of wealth which settles whether it is capital or not. Wealth which is intended to be used as an agent of production is capital; wealth which is not intended to be so used is not capital. A man takes a good breakfast. If he takes the breakfast only for the pleasure of the thing, for the pleasures of consumption, the breakfast is not capital. If he takes the breakfast only because it will help him to do his work as a producer, then the breakfast is capital and wholly so. As a matter of fact, he takes his breakfast partly for the pleasure of consumption and partly as an aid to production, and so it is partly capital and partly non-capital wealth.

Income.

(*Income* has been defined 'as the wealth measured in money which is at the disposal of an individual or community per year or other unit of time')—the income of the individual being *individual income*, and the income of the nation being *national income*. (As regards the definition of income, the question may be asked as to whether income includes only material wealth, or whether it includes also immaterial wealth. The answer is this—'*Income*' should be taken generally in a *broad sense*, and thus it would consist of *material wealth* and also *immaterial wealth*. The phrase 'at disposal' excludes that portion of the incomings which is required to keep up capital and other outgoings).

The National Income.

• The labour and capital of the country, acting on its natural resources produce annually a certain *net aggregate of commodities, material and immaterial*, including services of all kinds. This is the true '*National Income*' or the *National Dividend*. (For a fuller account, refer to the Book on Distribution).

National Income and National Wealth.

An estimate of a nation's prosperity based upon its money income alone is misleading in many respects.

Still the money income of a nation gives us in some respects a better measure of a nation's prosperity than that afforded by the money value of the nation's wealth—or in other words, *national income is a better test of the prosperity of a nation than national wealth*.

For the national income consists chiefly of commodities in a form to give pleasure directly ; while the greater part of national wealth consists of the means of production (e.g. tools, machinery, factory buildings, land, etc.) which are of service to the nation only in so far as they contribute to the production of commodities ready for consumption.

But if we look chiefly at the income of a country to indicate its economic prosperity, we must allow for the depreciation

of the sources from which that income is derived. As a stone house depreciates less quickly than a wooden house, a stone house makes more for the real richness of a country than a wooden house which gives equally good accommodation.

Capital. Income.

The term capital is conveniently discussed in connection with Income—**Capital is correlative to Income. (Capital is that part of wealth which is expected to yield an income, on account of the help given by capital as regards the work of production.)*

Different meanings of the word '*Capital*,' correspond to different meanings of the word '*Income*.' *Individual Income* corresponds to *Individual Capital*, the *Money Income* of an individual corresponds to his *Trade Capital* (business capital). *Social Income* is correlative to *Social Capital*, i.e., the capital of society as a whole.

Trade Capital and Money Income.

A man's trade capital consists of the part of his wealth which he uses in acquiring a money income. This trade capital includes:

- (1) Non-personal instrumental or producer's goods, e.g. his land, his factory, the machinery within the factory, raw materials, etc.
- (2) Non-personal goods intended to be used as consumers' goods by others on payment of something to him, e.g. food, clothing, house-room.
- (3) The good-will of his business.
- (4) The shares possessed by him in companies, his loans on mortgages, etc.

* "Capital is a stock, and income a flow. This, however, is not the only difference between capital and income. There is another, equally important; namely, that capital consists of *wealth*, while income consists of *benefits*. We have, therefore, the following definitions: A stock of wealth existing at a given instant of time is called *capital*; a flow of benefits from wealth through a period of time is called *income*." (Fisher—*Elementary Principles of Economics*).

From a man's trade capital must be subtracted the debts owed by him to other persons.

Social Capital and Social Income.

The business man is generally concerned with *Trade Capital*. Economists and statesmen in broad discussions of public welfare have to use another conception, the conception of *Social Capital*.

When we discuss capital not from the point of view of the individual, but from *the point of view of society as a whole*, we have to take a larger view.

(a) Social Capital.

The chief difference between individual capital and social capital relates to land and other free gifts of nature. Land, when it is in the private ownership of a particular person, is regarded as part of the capital of the individual. But in looking at capital from the social point of view, in calculating the amount of social capital, we make a distinction between what is produced by man and what is given as a free gift by nature. Only what is produced by man, and is then used in the production of wealth—only this is included within social capital; land and other free gifts of nature to society are not included within social capital, the free gifts of nature are part of the social wealth, but they are not social capital.

Note that land, though a free gift of nature to society, is not a free gift to the individual. A man who wants to acquire land has to pay a part of his capital for it; hence *from the point of view of the individual, land is capital.*

(b) Social Income.

Social income 'is the income of society as a whole.' The term 'Income' in Social Income is used in a large sense.

The word Income in Social Income means not Money Income only, but it is used in a large sense to include other forms of Income of benefit or gain. If a man lives in a house owned by himself, he does not include the benefit which he

derives from living in that house, as part of his money income, but this benefit is part of his total income of benefit or gain, and it must be included while calculating the total social income of the society ; and as the benefit derived from such a house is regarded as forming part of the social income such houses would be included within social capital. If we take the word 'Income' in a sufficiently large sense, we may say that even the *clothes* and the *furniture owned by a man who uses them*, yield income, and hence even these should be included within social capital. (Prof. Marshall thinks otherwise—he maintains that *such clothes and furniture* are not commonly regarded by people as yielding an income to the man, and therefore implies they should be excluded from social capital).

Social capital thus *excludes* (1) land and other free gifts of nature, and (2) clothes and furniture used by the persons who own them—(Marshall's opinion).

Social capital includes all other kinds of wealth which yield income (the word 'income' is here used in a large sense). *Social capital includes*—

Machinery, factory buildings, raw materials, finished goods and other things held for trade purposes, also theatres, hotels, bioscope shows and even houses inhabited by persons who own them, also things in government ownership like government factories—because all these things are regarded as yielding social income.

Consumption Capital. Auxiliary Capital.

Capital has been classified into (1) Consumption capital, and (2) Auxiliary or instrumental capital. (*Consumption capital* (also called *consumers' capital*) consists of goods which satisfy consumers directly, on which consumers live while producing, e.g. *food and clothes* are consumption capital.

Auxiliary or instrumental capital consists of all other goods helping labour in production except consumers' capital. Machines, factories, ships, railways, etc.,—all these are auxiliary or instrumental capital.)

Fixed Capital. Circulating Capital.

Capital has been also classified into (1) fixed capital and (2) circulating capital.

(*Circulating capital* is capital which fulfils the whole of its office in production in which it is engaged by a *single use*) or in other words, (*circulating capital* serves its end but *once* in the *work of production*. A quantity of cotton is circulating capital, because when it has been once manufactured into cotton cloth, cotton by that single use has served its purpose in production ; so leather or any other raw material.)

(*Fixed capital* is capital which exists in a *durable shape*.) and the return to which is spread over a period of corresponding duration ; or in other words, (*fixed capital* is capital which *does its work in production continuously for some time* (e.g., machines, ships, railways, etc.) and is not exhausted by a single use.)

Gross Income and Net Income.

When a man is engaged in business he has to incur expenditure for paying wages to the labourers, for buying raw materials and for other things. The *net income* of the man is found by deducting from his gross income the expenditure necessary to produce that gross income.

(Gross Income—expenditure required for producing the gross income=Net Income.)

Money Income. Total Income. Net Advantages.

A person's *money income* consists of that part of his income which comes to him in the form of money. A person's *total income* includes his money income, and also other forms of income, e.g., if an Indian labourer repairs his own thatched hut, he is in that way adding to his own total income, though not to his money income.

Every occupation offers the man engaged in it money wages, and also some other advantages ; and every occupation involves fatigue on the part of the worker and also other disadvantages.

If we calculate the total money value of all the advantages of the occupation, and if we subtract the total money value of all the disadvantages of the occupation from the total money value of all its advantages, then we get the *net advantages* of the particular occupation.

Interest. Profit. Rent. Wages.

These very important economic ideas will be discussed more fully and adequately later on, but preliminary definitions of them must be attempted here.

(*Interest* is payment made by a borrower to a creditor for the use of a loan.)

(A man engaged in business in the course of the year incurs *outlay* for his business; the excess of his receipts over his outlay constitutes his profit.) (If the value of the stock and plant of his business has increased, this increase is regarded as part of his receipts, and if the value of the stock and plant has decreased in the course of the year this decrease is regarded as part of the outlay).

What remains of a man's profit, after deducting interest on his capital at the current rate is called by some writers *Earnings of Management or Undertaking*. ($\text{Profit} - \text{Interest} = \text{Earnings of Management}$).

(The income derived from the ownership of land and other free gifts of nature is commonly called *Rent*; but the term 'Rent' has been sometimes extended to include income from houses, machinery, etc., the supply of which is limited for the time being and cannot be quickly increased to meet an increased demand.

The income derived by labourers from their labour is termed *Wages*.)

CHAPTER V.

Summary.

1. Economic terms (e.g. goods, wealth, capital, income, etc.) are largely taken from the language of ordinary business life; but with necessary qualifications and explanations suitable for the purposes of a science.

2. All desirable things (e.g. bread, clothing, water, air, a brother's love, etc.) are 'goods'.

We have material and non-material goods; transferable and non-transferable goods; free and appropriated goods; consumption and production goods.

3. Wealth is the substance of which utility is the attribute. As regards the other attributes of wealth, writers have differed.

In its widest sense, wealth means all goods. Anything that is desirable, anything having utility is wealth.

According to Taussig, the attributes of wealth are (1) utility, and (2) limitation of quantity. Things the supplies of which are limited in relation to the demand for them are wealth.

Marshall by the term 'wealth' refers generally to 'external wealth' only—viz. (1) material goods, and (2) non-material external goods in exchange for which material goods can be obtained. (Non-material internal goods are excluded).

4. The wealth of an individual includes

things strictly belonging to him alone (a) material goods, (b) non-material external goods, e.g. the good-will of a business.

There is also the individual's share of the common wealth and collective goods.

5. National wealth includes (1) the wealth of all individual members, (2) public material property of all kinds, e.g. public buildings, government factories and railways, etc., (3) even free goods like the Thames, the Ganges, water-power from waterfalls, and (4) such non-material elements of national wealth as a good government, etc.

6. Wealth and value are closely related terms, value goes with wealth.

Value may mean (1) 'value in use' of a thing (i.e. its utility), or (2) value in exchange of a thing, i.e. the power which its ownership gives to get other things in exchange for it.

The second is the more usual meaning now in Economics.

7. Wealth which is intended to be used as an agent of production is capital; wealth which is not intended to be so used is not capital.

Capital is the product of human endeavour. Land is an agent of production; but it is not capital from the social standpoint, it forms

a separate class, as it is a free gift of nature to society and is not the result of human endeavour.

Land for the individual is not a free gift; and so it is capital from the individual standpoint.

8. The ideas Capital and Income go together—Capital produces Income.

Income may be taken in a broad sense as in Social Income; and in a narrow sense as the Money Income of a business.

Economists distinguish between consumption and auxiliary capital; and also between fixed and circulating capital.

Questions.

1. What is wealth? Notice in this connection the views of Marshall, Taussig and Gide.

2. "It may be said, with an appearance of paradox, that the more things in the nature of wealth a community has, the less prosperous it is." (Taussig). Explain.

3. (a) What classes of goods constitute a man's wealth? What other goods should be included in the National Wealth? (A. U. 1897).

(b) Consider whether the following are to be regarded as wealth:

(1) Natural facilities for transport such as navigable rivers, (2) the Niagara Falls, (3) Air, (4) the poems of Kalidasa.

"For many purposes, we ought to reckon the Thames as a part of the wealth of England" (Marshall). Discuss this statement.

4. Define Capital.

Explain (a) "The distinction between capital and other wealth becomes fundamentally a psychological one". (Chapman).

(b) Capital possesses both productivity and prospectivity.

Are we to include land and natural intelligence of a population as capital from the social standpoint? (A. U. 1903).

5. Distinguish between social and individual capital; consumption and auxiliary capital; fixed and circulating capital.

Illustrate in detail the distinction between consumption and auxiliary capital in the case of a Cotton Mill; and the distinction between fixed and circulating capital in the case of a Tramway Company.

6. Write notes on production goods, consumption goods, net advantages.

BOOK II.

Consumption.

DEMAND AND ITS SATISFACTION.

Neglect of consumption by earlier writers.

In this book we study wants and their satisfaction.

The study of wants was rather neglected by earlier economic writers. There has been a great development in this branch of economic science, within recent times ; and this development is due partly (1) to the growing use in Economics of the more exact methods of the mathematical and physical sciences which have made possible a more scientific study of consumption.

(2) and partly to the earnest, humanitarian spirit of the present age which pays very great attention to the subject of consumption ; and the object of this attention is to see whether the increasing wealth of society cannot be consumed in a better manner so as to increase the total welfare of society.

Even now we are only at the beginning of a proper study of human wants and a great deal remains to be done. A study of human wants forms the true foundation of Economics, for men produce wealth, exchange and distribute it to satisfy their wants ; and a systematic study of human wants in different countries and in different times will throw a flood of light upon the economic history of nations and upon the developments of economic theory.

Consumption defined.

(Consumption means the *satisfaction of human wants by the use of goods*. A man using a coat, a hat, a chair, is said to consume them. As man cannot create matter, so man cannot destroy matter—man only produces utilities relating to exist-

ing matter, and *man destroys utilities, he consumes utilities*.) A consumer of a hat or a coat gradually destroys its utility by using it ; and though a 'consumer' of a house or a picture does little to wear them out himself, time destroys gradually the utility of these things, while he holds them in possession.

Its Importance.

It is true that, to some extent, human activity is regarded as an end in itself ; but consumption is the end of the greater part of human activity in production, exchange and distribution. (Man produces wealth because he wants to consume it—*consumption is the final goal of economic activity. Hence the importance of the study of consumption.*)

The importance of consumption has been strongly urged by Professor Jevons who goes so far as to say that, "*the whole theory of Economics depends upon a correct theory of consumption.*" Among recent writers Professor Patten has made important contributions. His object is to establish the importance of the study of consumption as the starting point of Economics in a progressive society. The kernel of Patten's theory is this. In a dynamic (progressive) society, the increase of industrial efficiency is based on supplying new wants of greater intensity, instead of supplying old wants more completely. Social progress depends upon increasing variety of consumption, and not upon increased quantity—it rests upon the substitution of qualitative for quantitative methods of consumption. A people with growing variety of consumption is ever finding new and more profitable use for slighted and neglected capacities of nature—it is thus able to escape the effects of the Law of Diminishing Returns.

Productive consumption and final consumption.

A distinction between these two is sometimes made.

(If goods such as machines, raw materials, are used up in the production of other goods, this is called *productive consumption* ; while if consumption itself is regarded as the final goal, we have *final consumption*.)

Productive and unproductive consumption.

Productive consumption may be defined strictly as that part of the producer's consumption which is necessary to keep up or increase his efficiency, while the remainder of his consumption is looked upon as unproductive consumption. It is impossible however to divide a society rigidly into two classes

of productive and unproductive consumers, because the large majority of the people are both productive and unproductive consumers though in different degrees.)

Rational calculation, also the influence of habit, fashion, imitation in consumption.

A deeper and wider study (than that usually found in economic text books) has become necessary in view of important developments in psychology, specially social psychology. Such study will broaden the foundations of Economics, will bring it nearer the realities of human life and society.

Sometimes economists argue as if the average consumer is guided wholly or largely by rational calculation (and balancing of utilities) in his or her choice as regards the particular goods and services to be consumed, the qualities and the quantities. In fact, the average consumer is much under the influence of habit, fashion and imitation. There is too much imitation of the upper classes by the middle classes, and of the middle classes by the labouring classes as regards the use of furniture, clothing and other things without due regard being paid to real need, cost of such things and incomes of purchasers. ". . . . for at least half his expenditure an ordinary individual does not know what he wants, and out of the other half for at least a half he does not get what he wants. It is only by becoming the creature of habit and the victim of mimicry or stimulation that he accomplishes very badly a task which is really more difficult than that of earning his income"—Mr. Dibblee, *The Laws of Supply and Demand*, p. 22, quoted by Hartley Withers in *Everybody's Business*, 1932, page 140.

There is exaggeration in Mr. Dibblee's statement but it has a substantial element of truth. The proper spending of a person's income to get from it the maximum amount of welfare possible, is a subject of the highest importance. In this the consumers in all countries require guidance and education.

Characteristics of human wants.

Human wants are not the same in all countries and in all times—they vary and are dependent on physical, moral, social,

political and economic conditions and institutions. For example, human wants in India as affected by the socio-economic institutions of joint-family and caste organisation are not exactly the same in nature as human wants in England unaffected by these institutions.

Man's wants have some general characteristics which are of great importance ; and important laws are based on these characteristics.

(1) *Human wants are unlimited in number.*

This immense variety of human wants distinguishes man from lower animals ; and it is this infinite multiplication of wants which has created modern civilization and all that is called 'progress.'

The savage has comparatively few wants.

As man progresses from savagery to civilization, his wants increase more and more.

(In ancient India, there were many persons of the highest culture and in modern Europe there are some who would make the limitation of wants the goal of life ; but these persons are the exceptions to the general rule.

One important economic aspect of Mahatma Gandhi's movement in India is a strong tendency towards the limitation and simplification of wants ; and this, with proper safeguards, has its uses specially in a poor, economically dependent country like India.)

With the progress of civilization, men and women generally desire more and more variety as regards their food and drink, house-room and other things. *In a modern society (England or France or America) the wants of man have an immense variety ; and there is practically no limit to the capacity of a modern community to consume goods.*

(2) *The satiability of any particular want.*

Any particular want is limited in capacity in the sense that a fixed quantity of one object is enough to satisfy it. A man wants water to satisfy his thirst. His want would become less intense after he gets one glass of water, and his want would be growing less and less intense with each successive glass, till he reaches the point of satiety.

On this characteristic of human wants is based the Law of Diminishing Utility.

(3) *Wants are competitive*—they compete with one another. This forms the basis of the important Law of Substitution relating to human wants.

A man may go to the theatre, or instead he may choose to go to a bioscope show. A boy with a penny may want a piece of jam, or instead of buying jam he may want a cake.

(4) *Wants are complementary*—some wants generally go together and are satisfied together and not separately. A motor car is of no use without petrol. Similarly a horse and a carriage are wanted together.

System of Demand.

One of the most noticeable things about demand is that ~~persons demand things in groups~~. The system of demand or group-demand of a day-labourer in Bengal includes demands for certain quantities of food, clothing, tobacco, etc.; the system of demand of a Bengali student includes among other things demands for books, magazines, newspapers, some sporting requisities (e.g., a foot-ball), perhaps a bicycle and so on.

The system of demand of each person depends (1) partly upon his own individual tastes, and (2) partly upon the standard of life or standard of comfort of his family, class, etc.

Utility (want-satisfying power).

Wealth is the substance of which utility (value in use) is the attribute. Wealth possesses the property of satisfying some one or other of human wants—in Economics this property is called utility.

(Utility = the power to satisfy human wants).

Anything that satisfies a human want is said to have utility. The word 'utility' in Economics does not possess any moral significance. The use of alcoholic liquors is perhaps not desirable from the moral point of view; but these alcoholic liquors satisfy a want, and therefore they have utility in the language of Economics.

1. Law of Diminishing Utility or Law of Satiabile Wants.

Each particular want is satiable ; not all wants together. Each particular want of a man is limited—a man's desire for a particular commodity diminishes, other things being equal, with every increase in his supply of that commodity.

(A) An illustration of the Law.

A man who is a smoker desires very strongly to have *at least one pound of tobacco every month*. This pound satisfies a *very urgent want*. Suppose the utility of the first pound is measured by 100.

Then he increases his supply to 2 lbs. of tobacco, the 2nd pound satisfies a less urgent want than the 1st pound, the utility of the 2nd pound is less than the utility of the 1st pound. The utility of the 1st pound is represented by 100 and suppose the utility of the 2nd pound is represented by 80.

Then he increases his supply to 3 lbs. of tobacco, the third pound satisfies a less urgent want than the 2nd pound. Suppose the utility of the third pound is measured by 60. When the man increases his supply from 2 to 3 lbs., the additional utility (60) which he gets from the third pound is less than the additional utility (80) which he gets from the 2nd pound when he has a supply of 2 lbs. only. And so on.

Total stock of the man.	Utility of first pound		Marginal utility	Total utility
1 lb.	100		100	100
	Utility of 2nd pound			
2 lbs.	100 + 80		80	180
		Utility of 3rd pound		
3 lbs.	100 + 80	+ 60	60	240
		Utility of 4th pound		
4 lbs.	100 + 80	+ 60	+ 40	280

(B) The Law.

(The more we have of a thing, the less we want still more of that thing. With every increase of his stock of that commodity, the additional utility which a man derives from an additional unit of the commodity diminishes—this is the law of diminishing utility.)*

It follows from the law of diminishing utility, that the larger the amount of a commodity that a man has, *other things being equal*, the less will be the price which he will pay for a little more of it. ('Other things being equal' is equivalent to 'other conditions being the same.' *If other things are not equal*, if the 'other conditions' are changed *e.g. if the man's income is suddenly increased*, then he may buy more of the commodity at the same price or at a higher price than before, though he has a good stock of the commodity already).

Limitations on the Law of Diminishing Utility.

Though the additional utility which a man derives from an additional unit of a commodity diminishes ultimately, yet for a time it may increase. As Prof. Chapman points out in his *Outlines* 'If we take the increments of commodity small enough, marginal utility would generally mount at first. Consider the value of ounces of coal per day. An ounce of coal is no good to anybody, it has little utility. Coal would not yield any value worth speaking of, until we have a large number of ounces ; so here utility increases for a time with every additional ounce ; and only after a very large number of ounces, additional utility of an ounce will diminish with each successive ounce.'

Prof. Chapman also points out other interesting cases of limitations of diminishing utility. Also refer to Taussig, *Principles*, Vol. I, Ch. 9. "The tendency (to diminishing utility) shows itself so widely and with so few exceptions that there is no significant inaccuracy in speaking of it as universal."

* Prof. Marshall states the law in this way "The additional benefit which a person derives from a given increase of his stock of anything, diminishes with the growth of the stock that he already has."

Marginal Utility, Total Utility, Demand Price.

From the law of diminishing utility, we are led to the conceptions of total utility and marginal utility.

A man who is purchasing a commodity stops at a certain point. He thinks that at that price and under those conditions he cannot afford to purchase more of the commodity.

(That part of a commodity which lies on the margin of a man's purchase, which a man is on the margin of doubt whether it would be worth his while to purchase and which he is just induced to purchase—this is called his *marginal purchase*.)

In the illustration on page 104,

(a) when a man's total purchase amounts to 1 lb., 1 lb. is also his marginal purchase.

(b) when a man's total purchase amounts to 2 lbs., the 2nd lb. is the pound which is at the margin of his purchase, which he is just induced to purchase and he cannot be induced to purchase more pounds, and so the 2nd lb. is his marginal purchase

(c) when a man's total purchase amounts to 3 lbs., the 3rd pound is the pound at the margin of his purchase, and so the 3rd pound is the marginal purchase.

The utility of the marginal purchase, the benefit derived from the marginal purchase is called *marginal utility*.*

In our illustration

when a man's marginal purchase is the 1st lb., marginal

	utility	=	100
is the 2nd lb.	„	=	80
is the 3rd lb.	„	=	60
etc.			

(So the *marginal utility of the commodity to the man diminishes with every increase in the amount of the commodity he possesses*.) (When the man has acquired a very large number of pounds, marginal utility may fall to zero; and if he is made to take tobacco even beyond this point of satiety, such an addi-

* In terms of marginal utility, (the law of diminishing utility states that the more we consume of a thing, the less becomes its marginal utility to us.)

tional pound will produce dissatisfaction or *disutility* instead of utility).

Total utility of a commodity to a man consists of the sum of the utilities of all the units of the commodity possessed by him—it is the *total satisfaction* yielded by the whole stock of the commodity possessed by him.

In our illustration on page 104,

Total utility in case (a) is the utility of 1 lb. = 100 = 100
 in case (b) is the utility of 2 lbs. = 100 + 80 = 180
 in case (c) is the utility of 3 lbs. = 100 + 80 + 60 = 240

As a man's stock of a commodity increases, *we see that its total utility to him increases, but it increases at a diminishing rate.*

Suppose a man has an income of Rs. 200 a month. He has to pay his house-rent, buy food articles, clothing etc. and with tea selling at Re. 1 per lb. he calculates that he can just afford to purchase 3 lbs. of tea. He stops at the third pound of tea. For he calculates that the utility of the third pound (60) is worth the rupee that he has to pay for it. The third pound is his marginal purchase, and the utility of this purchase is the marginal utility of the commodity to him. The price (Re. 1) which he pays for his third pound measures the utility of the third pound of tea to him—it measures marginal utility of tea to him. *But in the same market he will have to pay the same price (Re. 1) for each of the three pounds of tea—the first pound, the second pound, and the third pound, though to him the second pound has greater utility than the third pound and the first pound has greater utility than the second pound. So for each pound of tea he has to pay a price (Re. 1) which measures the utility of the third pound (i.e. marginal utility) to him—and not the utility of the second pound, nor the utility of the first pound, nor total utility of all the pounds.* And he will not buy a fourth pound of tea, because on account of diminishing utility the utility of the fourth pound to him is less than the utility of the third pound—i.e. the utility of the fourth pound is less than the utility of the rupee which he will have to pay for it.

So with an income of Rs. 200 a month and with tea selling

at Re. 1 a pound, this man purchases three lbs. of tea ; and the price (Re. 1 per lb. of tea) which he pays measures the marginal utility of tea to him—and not the utility of any other pound of tea, nor its total utility. (Of course with a lower price or with a larger income he might buy more tea).

If the price which a man is ready to pay for any pound of tobacco be called his *demand price* for that pound, the price which he is willing to pay for the marginal purchase is called the *marginal demand price*.

The study of Demand in connection with Price.

Present-day Economics is largely a theory of prices.

The demand of an individual (or a market) for a commodity is studied in connection with price—the demand of an individual (or a market) for a commodity refers to the different amounts demanded at different prices. Elasticity of demand will have to be studied—elasticity referring to changes in demand brought about by changes in price. (See pages 111-116.)

Also consumer's surplus which has reference to the surplus utility which the consumer gets over the price paid by him in connection with his demand for and purchase of a thing. (See pages 125-134.)

Demand Prices.

Demand in Economics means the offer of money for things, *the demand for a commodity expresses the different prices which will be paid for different quantities of the thing.*

(A) Demand of a single person.

(The price which a man is willing to pay for a particular amount of a commodity is called his *demand price* for that amount. To obtain a complete knowledge of a man's demand for any commodity, we must know the different prices which he is prepared to pay for different amounts of the commodity, that is, *we must know all his demand prices.*)

Demand schedule of an individual.

Suppose we find that a man is ready to buy

2 lbs. of tobacco	at Rs. 3	per lb.*
4 " "	Rs. 2	" "
6 " "	Re. 1	" "
9 " "	As. 8	" "

If corresponding prices for all intermediate amounts are put down, so as to furnish a complete list of demand prices, this list of demand prices gives us a complete knowledge of the demand of the person. (A complete list of the demand prices of a man is called his *demand schedule*).

We see that the *amount demanded increases with a fall in price* and the *amount of the commodity demanded diminishes with a rise in price*.

(B) Demand of a Market.

Having looked at the demand of the individual, we now look at the demand of a market. A market consists of many individuals; and the *demand of a market consists of the sum of the demands of all individuals included within the market*. Now these individuals are not all of the same type—some are rich, others are poor, some have a strong taste for the commodity, others are only moderately inclined to it. *A given fall in the price of a commodity will not therefore affect exactly in the same way the demands of all individuals; the fall will increase greatly the demands of some persons, will increase the demands of other persons in a less degree and so on; but other things remaining equal, the fall in price, however small, will increase the total demand for the commodity in the market. And other things being equal, a rise in the price of the commodity, however small, will diminish the total demand for the commodity in the market.*

The list of demand prices of a market is called the *demand schedule of the market*. Suppose there are 100,000 persons in

* Note that Rupees 3, 2, 1 are *marginal demand prices*; and these marginal demand prices are to be distinguished from those prices which the person would offer if the alternative was his being deprived of the thing altogether.

the market—some are very rich, others are rich, others poor, some have a great love of tobacco, others have only a moderate liking for tobacco and so on ; and so the demand of every individual will not be the same. If we assume that the average demand per head of all these 100,000 individuals is equal to the demand of the individual whose demand schedule we have already studied (*page 109*), then in the demand schedule of the market we shall have to write 100,000 pounds for every pound in the demand schedule of the individual.

Demand schedule of a market.

The demand amounts to

200,000lbs.	at Rs. 3 per lb.
400,000lbs.	at Rs. 2 „ lb.
600,000lbs.	at Re. 1 „ lb.
900,000lbs.	at As. 8 „ lb.

If corresponding prices are put down for all intermediate amounts, then we shall have a complete *list of demand prices* giving us complete knowledge about the demand of the market *during a given time and under given conditions.*

[Note the qualification *during a given time and under given conditions.* The above list of demand prices will have to be changed if the conditions are changed—suppose tobacco becomes very unfashionable, or suppose it is condemned severely by a strong body of medical opinion, or suppose it is replaced by a cheaper substitute, then the demand for tobacco will diminish, and the demand prices will be lower.]

Increase of Demand.

An increase of demand of a particular person for a particular commodity means (i) that he will buy more of the commodity at the *same price* as before, and (ii) that he will buy as much of the commodity as before at a *higher price*. So also as regards the demand of a market.

Sidgwick on Increase of Demand.

Prof. Sidgwick says that the phrase 'increase of demand' is ambiguous. It may signify (1) the increase in the quantity which would

result from any fall in price, or (a) an increase in the quantity demanded at any given price. He thinks it is better to speak of the former as an *extension of demand* and of the latter always as a *rise in demand*. The terms *reduction* and *fall of demand* are the opposites of extension and rise respectively.

II. The Law of Demand.

The general Law of Demand is based on these experiences relating to demand prices, and the law can be stated thus—the amount demanded increases with a fall in price, and diminishes with a rise in price.

The Law of Demand is closely connected with the Law of Diminishing Utility—the utility of successive units to a man is less and less, and so the amount demanded increases only with a fall in price. (There will not be any uniform relation between the rise in price and the decrease of demand, and fall in price and the increase of demand. If the price of a commodity falls by 25 per cent., the demand for the commodity may be increased not by 25 per cent., but by 20 per cent., by 50 per cent., or it may be increased by 79 per cent.).

Marginal Utility and the Market Price.

The market price of the commodity measures the marginal utility of the commodity to each purchaser *individually*; there is no marginal utility *in general* for all purchasers in the market, because the *marginal purchase is not the same pound for all persons*, the wants and also the wealth of different individuals being different.

THE ELASTICITY OF WANTS.

(Influence of Price changes on Demand).

Connection between Law of Diminishing Utility and Elasticity of Wants.

It has been noticed already, that a man's desire for any commodity diminishes, other things being equal, with every increase of his stock of the commodity. (a) If the man's desire for the commodity diminishes *rapidly* with every increase of his stock—then a *small fall in the price* of the commodity

will increase his demand only by a small amount, and we say the elasticity of demand is small ; (b) if the man's desire for the commodity diminishes comparatively slowly, then a small fall in the price of the commodity will increase his demand by a large amount and we say that the elasticity of demand in this case is great.)

If a fall in price (say from 8 annas per pound of mutton to 7 annas per pound of mutton) increases much a man's demand for mutton, increases his demand from 10 to 15 pounds, a rise in the price of mutton from 7 as. to 8 as. per pound will diminish much his demand for mutton (other things being equal), will diminish his demand from 15 to 10 pounds ; and so when the demand is much elastic for a given fall in price, it is also much elastic for the opposite rise in price.

What is Elasticity?

Elasticity is an attribute of Demand. (Demand is elastic in the sense that demand changes (increases or decreases) with change (decrease or increase) in the price of the commodity.

The elasticity of demand is (a) great when there is a great change (great increase or great decrease) of demand as the result of a given change in price ; (b) small when there is a small change in demand (small increase or small decrease of demand) as the result of a given change in price.)

This fact of the elasticity of demand, we find as regards the demand of an individual, and also as regards the demand of a market.

In Prof. Marshall's words,

(the elasticity of demand in a market is great or small according as (1) the amount demanded increases much or little for a given fall in price ; and (2) as the amount demanded diminishes much or little for a given rise in price.)*

* Prof. Chapman thus explains elasticity : 'We say that demand is highly elastic if the demand price falls very little as consumption is increased, and that it is highly inelastic if the demand price falls rapidly as consumption is increased.)

The General Law about Elasticity.

Prof. Marshall gives the following general rule about elasticity of demand.

Elasticity varies with price. In general, the elasticity of demand for a commodity within any class of people will be great for high prices, and the elasticity will be great or at least considerable for medium prices, and the elasticity of demand will diminish as the price falls ; and it will gradually fade away if the fall in price is so great that the satiety level is reached by members of the class. (Each class has its own levels of high prices, medium prices, and low prices ; and the different classes differ considerably as regards their levels of prices, a price which is regarded as a high price by the working classes will be regarded as a low price or medium price by the upper classes).

Some rules about Elasticity of Demand. (The elasticity of demand is different for different kinds of commodities ; and even for the same commodity it is different for different classes of people.

(i) *Luxuries and Necessaries.*

(a) *Highly expensive luxuries.*

The demand for rare wines (or other highly expensive luxuries) is elastic among the rich, the demand for these wines among the rich people will increase considerably with a fall in the price ; but the demand for these rare wines is inelastic among the poor—as even when there is a fall in price, the price will be still too high for the poor and so the fall in price will not lead to an increase of demand among the poor.

As is the case with rare wines, so is the case with other *highly expensive luxuries* (e.g., fruits out of season, costly dresses), and things like the services of a highly paid barrister or an exceptionally fashionable surgeon.

(b) *Moderately expensive luxuries.*

As regards moderately expensive luxuries (e.g. wall-fruit, better kinds of fish, etc., in England ; and moderately expensive varieties of sweetmeats, etc., in India), any fall in the price of them will be followed by a large increase in the consumption

of them by the middle class ; but the fall will not be followed by a large increase in the consumption of them by the rich (because the rich have already that commodity to satiety and they do not want more of it), nor will the fall be followed by a large increase in the demand of the poor (because even after the fall in price, the price is still too high for the poor). So the demand of the middle class is elastic, but the demand of the rich and of the poor is inelastic for moderately expensive luxuries, etc.

The elasticity of demand thus varies with difference in income.

(c) *Necessaries.*

Demand for necessities is generally much less elastic than the demand for luxuries.

In a rich country like England, even the poorer classes have already enough of necessities like bread, salt, etc., and so a fall in the price of necessities will not lead to any considerable increase in demand, and hence in England the demand for necessities is inelastic. The demand for necessities is however elastic in poorer countries (e.g., India, China) where the people have not a sufficiency of necessities—there a fall in the price of necessities will lead to a considerable increase of demand.

Any article, which though not necessary, is yet clung to with great persistence, has an inelastic demand, similar to the inelastic demand for necessities. This is the case with meat and many other things for the well-to-do classes.

Things which are not indispensable have often an elastic demand. Decent dress, furniture have generally an elastic demand. The demand for popular novels is elastic. The demand for scientific books is however inelastic ; these books appeal to a small circle of readers, and a fall in price will not much increase the demand. There is always an elastic demand for house-room, on account of its real conveniences, and the social distinction which it affords.

(ii) *Influence of Habit.*

When men have acquired the habit of using a commodity, their demand for it is less elastic than their demand for other commodities.

(iii) *Influence of variety of uses.*

Generally, those things which can be applied to many different uses have the most elastic demand, e.g. water, iron, etc. Water is needed for drinking, for cooking, for washing and so on.

(iv) *Influence of substitutes.*

A commodity which has got satisfactory substitutes and can be easily replaced by them has naturally an elastic demand. Electric light has a good substitute in the gas lamp. The hand punkah is not however an efficient substitute for the electric fan.

(v) *Influence of distribution of wealth.*

"In general, elasticity of demand is increased by an equal distribution of wealth, while an unequal distribution leads to inelasticity in demand." (Taussig, *Principles*, Vol. I. Ch. X).

Difficulties relating to Statistical Measurement of Elasticity of Demand. (For these difficulties, refer to Marshall, *Economics of Industry*, Book III, Ch. IV., also *Principles*, Book III, Ch. IV).

Measurement of Elasticity.

(1) *A method of measuring elasticity* (Marshall's method followed by Chapman and others).

It has been suggested that the elasticity of demand can be conveniently measured in the following way :

Number of pounds demanded.	Price offered	Total Sum (Amount x Price)	Elasticity.
1 lb.	30 as. per pound	30 as.	Elasticity = 1
2 lbs.	15 as. per pound	30 as.	
3 lbs.	10 as. per pound	30 as.	
4 lbs.	7½ as. per pound	30 as.	Elasticity greater than unity.
5 lbs.	7 as. per pound	35 as.	
6 lbs.	6 as. per pound	36 as.	
7 lbs.	4 as. per pound	28 as.	Elasticity less than unity.
8 lbs.	3 as. per pound	24 as.	
etc.			

When the *total sum paid* (the product found by multiplying the amount and the price) *remains constant*, the *elasticity of demand* is regarded to be equal to unity. In our table, the elasticity is equal

to unity in the first and the second and the third cases. When the *total sum paid has increased*, we say that the elasticity of demand is greater than unity; and when the *total sum paid has decreased*, we say that the elasticity of demand is less than unity. Each of the sums 35 as. and 36 as. is greater than 30 as. and so in each of these cases, the elasticity is greater than unity; and as the sum 24 as. is less than 28 as., the elasticity in that case is less than unity.

(2) *Flux's method.*

$$\text{Elasticity} = \frac{\text{Percentage increase of demand.}}{\text{Percentage fall in price.}}$$

Or putting it more generally,

$$\text{Elasticity} = \frac{\text{Percentage change in demand (increase or decrease in demand).}}{\text{Percentage change in price (fall or rise in price).}}$$

Importance of the Elasticity of Demand concept.

The importance of the conception to the economist in theoretical problems is great. It enables him to take note of the fact that demand is variously affected by a change in price in the case of different commodities, and under different conditions and for different classes. And the conception affords valuable help in the solution of practical problems. If the demand is highly elastic, a monopolist will find it profitable to charge a low price and have large sales. The finance minister must take into consideration elasticity of demand when imposing excise and customs duties on commodities.

IV. The Law of Substitution, Indifference or Equi-marginal Utility. (The choice between different uses of the same thing).

Marshall and his followers make much use of the Law of Substitution. Others will dispute whether in the actual economic world, there is really so much of substitution based on rational calculation.

(The Law of Substitution is of the very greatest importance in Economics, it applies to consumption, production and distribution.) The bearing of the Law of Substitution on production and distribution of wealth will be discussed in their proper places later on; here we have to examine the application of the law to consumption.

The law can be stated thus—If a person has a *thing* which he can put to *several uses*, he will tend to distribute it between these uses in such a way that the thing has *the same marginal utility in each of these uses*.

The reason is this. *In this way only a person will be able to get the largest possible satisfaction out of the thing, and so every reasonable man (or woman) will tend to act in this way.*

Illustrations of the Law.

Suppose a person has got a certain quantity of *wool*—he will (if he is a reasonable person) try to get the largest possible satisfaction out of that quantity of wool, and he will be able to get it only if he will distribute in such a way the wool among different uses for himself (with part of it he will make coats, with part of the wool he will make socks and so on) so that in each of these uses, wool has the same marginal utility to him.

Suppose a person has got a certain amount of Money—the law states that he will tend to distribute the money among several uses, so that money to him has the same marginal utility in each of these uses. If he is a reasonable person he will want to have the largest possible satisfaction out of his money, and he will be able to get the largest possible satisfaction only if he distributes his money among his different purchases in such a way that money has to him the same marginal utility in each of these purchases. Suppose by mistake he buys more hats than he requires, and he buys fewer pairs of boots than he wants—then the marginal utility of a rupee spent in buying hats is less than the marginal utility of a rupee spent by him in buying boots; and *he will have a larger total satisfaction out of his money if he buys fewer hats, and more boots*, if he spends more money upon boots and less upon hats, in such a way that the marginal utility of money to him is the same in the purchase of boots as in the purchase of hats.

Present and future uses.

The Law applies not only to present uses; it also applies to *uses*, some of which are *present* and some of which are *future*.

A prudent person will try to distribute his money between all uses, present and future, in such a way, that money has the same marginal utility in each of these uses. Of course in calculating the present marginal utility of a distant benefit, we must make an allowance for (i) the *uncertainty* of the future benefit, and (ii) for the *difference in value to a man between a present and a future benefit, one being a present and the other a future benefit*. (There is a difference in value between a present and a future benefit, even when the future benefit is perfectly certain. The difference is due to the mere fact of futurity).

Consumption and saving.

The question of *spending* vs. *saving* has always attracted great attention.

(1) Saving is necessary so that through saving his surplus income, a member of a family may make *the family economically independent, thus allowing some of its members to do great work for society in art, science or literature*, occupations where the remuneration is not always sufficient and attractive.

(2) *Another important social aspect of saving is this.* Saving out of the surplus income of individuals provides capital for tools, machinery, buildings, railways and other transportation facilities which are indispensable for the efficient production and exchange of economic goods. The efficiency of the production of wealth in a community depends in an important degree upon the supply of capital and the growth of capital depends upon saving.

(3) The economic independence of the family, if secured by adequate savings, will protect it when the bread-winner is taken away by death or is disabled by sickness, accident, etc. But if there are no savings, if the entire income has been expended on consumption, then the family will have to suffer seriously. *This is the economic importance of saving from the family standpoint.*

So a proper amount of saving is necessary both in the interest of the family and also in the interest of society. Saving is good ; but too much of saving is not good, saving by

curtailing the consumption of necessities is not in the least desirable. *Wealth should be distributed between consumption and saving in such a way that a maximum final consumption (including both present and future consumption) will be maintained, taking long periods of time.*

In India, the surplus national income (the surplus above the necessities of life) is small and so the total annual saving is comparatively small. This is one of the serious hindrances to the adequate development of the production of wealth in India. The mass of the people in India has not the means to save in any considerable measure; but those persons of the middle classes who have the means to save, they are generally quite careful about securing the economic independence of the family as far as possible, and perhaps among them the tendency is to curtail unduly consumption so as to save more.

[The conditions stimulating saving will be discussed in connection with 'the growth of wealth.']

Necessaries. Comforts. Luxuries.

Wealth may be divided into (1) Necessaries; (2) Comforts; (3) Luxuries.

Necessaries again are (i) *necessaries for existence*, the things (food, drink, clothing, etc.) which are absolutely necessary to maintain the life of the labourers and their families in any particular branch of industry.

(ii) *Necessaries of efficiency* which include the necessities for existence and in addition also those things which are necessary to make the labourers fully efficient in their work. A small quantity of food and a little clothing are sufficient to maintain the life of a labourer; but larger quantities of food and clothing are necessary to keep the labourer in a state of efficiency.

(iii) *Conventional necessities* are things like tobacco, alcohol, etc., the use of which is so habitual and hence necessary that to obtain them, men and women would sacrifice to some extent comforts and even necessities for efficiency; and hence necessities for efficiency include necessities for existence and also conventional necessities.

Comforts are things which add to the efficiency of a labourer, but add amounts which have less value than the cost of the comforts.

Luxury.

Luxury has been aptly defined as the *consumption of commodities which are not necessities*.

Prof. Gide defines *luxury* as the satisfaction of a superfluous want.

Prof. Ely defines it as excessive consumption (i.e. consumption of things which are not necessities).

And what are necessities? As Prof. Marshall has remarked "the income of any class in the ranks of industry is below its *necessary level* when any increase in their income would in course of time, produce a more than proportionate increase in their efficiency." The strictly economic necessities include (1) things absolutely essential to the industrial efficiency of the average family in the class considered, e.g. food, clothing, shelter; and (2) also conventional necessities.

Luxury is a relative term.

What we think to be a 'luxury' depends upon what we think to be 'necessaries.' Our idea of necessities is relative to time, place and persons, and our *idea of luxuries is also relative, differing with different times and persons, and places.*

A cup of tea is a conventional necessary to an Indian gentleman, but it is a luxury to an Indian agricultural labourer—so we see our idea of a luxury recognizes a difference in persons.

A shirt was considered a great luxury in Europe a long time ago, and it was looked upon as a royal present; in modern times a shirt is looked upon as a necessary by every European. So our idea of luxury recognizes also a difference in times.

A shirt is a necessary for an English labourer in England; but it is a luxury for an Indian labourer. So the conception of luxury recognizes also a difference in place.

Defensible luxury. Beneficial effects of luxuries.

Ancient philosophers severely denounced luxuries; modern economists, while recognizing the evils which spring from luxuries, point out that luxuries have also their beneficial effects.

(1) From the point of view of *consumption*, luxuries to a certain extent are desirable. The economic goal should be necessities for all, and some luxuries even for the poorest. A pot of flowers in the room or a small piano would add much to the pleasure of an English workman.

(2) Some economists point out that the desire for luxuries has a stimulating effect on production ; it is often with the object of enabling his wife to indulge in expensive luxuries (*e.g.*, valuable laces, splendid mansions, big motor cars) that many an American millionaire has earned his millions.

(3) One sort of provision against a national disaster is constituted by luxury in the form of precious ornaments.

(4) Luxury prevents population increasing in excess of subsistence, by forming a comparatively high standard of comfort below which people will refuse to marry and will refuse to have children.

So the benefits of luxury are numerous. Voltaire has acutely remarked : "The superfluous is also very necessary."
Some kinds of luxury are wrong.

Though luxuries have their uses, yet some kinds of luxury are unjustifiable and must be condemned.

(1) The economic ideal should be necessities for all before luxuries for any ; and *luxury becomes a very great evil if the rich spend large sums in wasteful luxuries where there are many persons in want of necessities*. Luxury of this type is largely prevalent in India and more or less in all countries. When millionaires indulge in extravagant and wasteful luxuries, while honest hard-working labourers are in want of the barest necessities,—surely this is an evil of the greatest magnitude. Such conduct is extremely *immoral* on the part of the luxurious rich. And such conduct is attended with great *economic and political and social evils*, because those persons who are in want of necessities become thereby economically less efficient, and politically and socially also they are reduced to a lower level.

(2) *Luxury can become an evil in another way*. When the rich squander immense sums on capricious luxuries, and poor people with a large capacity for artistic and literary work

and appreciation have not the means to satisfy and develop them—then also luxury becomes a grave social wrong. In the progressive countries of Europe and also in the United States, the poorer people, though they cannot buy valuable pictures and books, yet have numerous free public libraries, public picture galleries which they can attend ; and the comparative absence of these facilities in India makes the evil more serious as regards the Indian people.

(3) It has been seen that the luxuries of the rich have often evil effects. And what about the luxuries of the poor? *Some kinds of poor men's luxuries are no less injurious and wasteful.* The large sums of money spent by Indian labourers in the consumption of different kinds of intoxicants, the millions wasted by labourers in Europe on alcoholic drinks—all these make the labourers poorer, reduce their economic efficiency, and oftentimes ruin them physically, mentally and morally.

Is art a justifiable luxury ?

Some economists hold that art is a justifiable luxury. *They declare that unjustifiable luxury or waste consists in a disproportion between the quantity of social labour consumed and the individual satisfaction obtained ; and as true art (in sculpture, painting, etc.) does not require on the part of the artist labour disproportionate to the result, as a few days' labour of the artist is enough to provide high artistic pleasure for generations of men, therefore art is not an unjustifiable luxury.*

A fallacy respecting luxury.

There is a popular belief that luxury gives employment to labour, that extravagant expenditures on wasteful luxuries 'make work' for others, and benefit them. A rich person gives a ball : and he employs decorators, musicians and other kinds of labour. The persons invited to the ball buy new dresses, scents and so give employment to dress-makers, scent-makers. So here expenditure in connection with a luxury (*i.e.* the ball) gives employment to labour.

The rich person instead of giving a ball to persons already satiated with balls, may however invest the money in an industry which produces goods needed by the community, and in that way may employ labourers in doing useful work for the com-

munity. The fallacy regarding luxury consists in thinking that expenditures on wasteful luxury are to be defended because they 'make work' and give employment to labourers. If the money instead of being spent on a ball (which is not wanted by persons already satiated with balls), is invested in an industry producing goods really needed by the community, then the money will employ labourers in a more useful way than in the case of the ball because in that case the labourers engaged in the industry are producing goods which are really useful to the community.

Statistics of Consumption.

Investigations relating to the statistics of consumption have been carried out in different European countries and also in the United States. The German writer Engel carefully studies a large number of *family budgets*,* with the object of discovering general laws about consumption.

The following table by Engel gives his experiences as regards family budgets in Saxony.

Engel's Table illustrating Engel's Law.

Labourer's family.		Middle class family.		Well-to-do family.	
Subsistence	62	55		50	
Clothing	16	18		18	
Rent	12	12	90%	12	85%
Heat and Light	5	5		5	
Education	2	3.5		5.5	
Taxation	1	2		3	
Care of Health	1	2		3	
Personal service	1	2.5		3.5	
	<hr/>	<hr/>		<hr/>	
	100	100		100	

* A family budget is the balance sheet of receipts and expenses of a family and if properly studied it will reveal the whole economic life of the family concerned.

From his table Engel deduces the following conclusions :—

(1) The smaller the income, the greater is the percentage of expenditure for subsistence.

(2) The percentage of expenditure as regards clothing is practically the same, whether the income is small, or whether the income is comparatively large.

(3) *The percentage of expenditure as regards rent and as regards heat and light is also approximately the same whatever the income.*

(4) The greater the income, the larger the percentage of expenditure for education, health, personal service, etc.

Of course the percentage of expenditure in a family of a particular class (e.g. a labourer's family) as regards subsistence, clothing, rent, heat, etc., is not the same in all countries. In Belgium in a labourer's family the percentage of expenditure on food is 61%, on clothing 15% and rent 10% etc. ; and in the United States the percentage of expenditure on food is only 43'4 per cent., on clothing 10'6 and on rent 19'4 ; and in India in a labourer's family, the percentage of expenditure on food will be greater than in Belgium and the United States, but the percentage of expenditure on clothing, and also on education, health, etc., will be less than in the two other countries. Still an examination of family budgets in all countries confirms, on the whole, Engel's conclusions and we may conclude generally about the consumption of different classes—

(i) *persons with small incomes, spend the greater part of their income on food, clothing, heat and light, and the smaller the income the greater the percentage of expenditure on these objects which satisfy merely physical wants.*

(ii) *persons with comparatively large incomes, will spend relatively less on food and clothing and will spend relatively more on education, personal service, etc.*

Consumers' Associations—Consumers have now associations in different parts of the world ; these consumers' associations are chiefly of two different types.

(1) One class of associations has the object of protecting the consumers' rights and interests.

There are consumers' associations to prevent adulteration of goods, and there are the associations against Protection.

Consumers sometimes resort successfully to strikes to demand their rights, *e.g.* the strike of consumers against the Beef Trust in the United States, the strike against the gas companies in France.

(2) Another class of such associations has the object of teaching the consumers their *duties* in connection with consumption. These associations can be sub-divided into classes.

(a) Those associations which oppose harmful or immoral consumption, *e.g.*, associations against the use of alcohol, opium, or against the wearing of birds' feathers on ladies' hats.

(b) Those associations which try to benefit labourers. Some of these have *white lists* on which they put down the names of those shops where the labourers get satisfactory wages and conditions of work ; and the members of these associations will buy things only from these shops and not from the other shops.

***Consumer's Surplus** (satisfaction).

The conception of consumer's surplus was first introduced into Economics by Prof. Marshall ; and he has done more than any other writer to clear up the whole subject. In view of the great importance of this conception in recent economic theory, some account of it must be given here. *The conception has its difficulties* ; and its full value can be realized only by those who have made a study of advanced economic theory.

(Suppose a man with an income of rupees two hundred per month lives in Calcutta ; and he has a son who is in Bombay. The man wants to write to his son once a week, and he can write to him by spending 3 pice on a postcard. The man's desire to write to his son once a week is so strong that if he could not get the postcard for 3 pice, he would be willing to pay even 4 annas for the postcard and as he is able to get the postcard for the cheap price of 3 pice for which

* Consumer's Surplus has been sometimes called *consumer's rent* ; but the expression consumer's surplus is now in more general use.

he would have been willing to pay 4 annas, if necessary, he is getting a surplus of satisfaction by buying the postcard at that cheap price. *(The surplus satisfaction of the consumer from his purchase is called consumer's surplus; and the excess of the price which he would be willing to pay rather than go without the thing, over that which he actually does pay (4 annas—3 pice=13 pice in the above illustration) is the economic measure of this surplus satisfaction.)*

Consumer's Surplus and Conjuncture.

The consumer's surplus derived from certain commodities is greater than that from other commodities. Many men would be willing to spend much more than one anna for a newspaper if they could not get it for one anna. Anna newspapers, matches, telegraphic messages are some of the commodities yielding a considerable consumer's surplus.

Consumer's Surplus depends upon the conjuncture of circumstances around us, it depends upon our social, political and economic environment. In a civilized country there are cheap newspapers, railways, telegraphic messages, etc., and people derive a very large consumer's surplus from them; in a country inhabited by a very backward people there are no cheap newspapers, etc., and the consumer's surplus from them is absent.

The Consumer's Surplus of an individual.

How to get the economic measure of the consumer's surplus of an individual from the purchase of a commodity—this has been already explained. Again a man instead of buying a single postcard, may choose to buy several postcards. Instead of buying a single pound of tea, he may buy several pounds of tea at a particular price. Because of the law of diminishing utility, the consumer's surplus from his second pound is smaller than the consumer's surplus from his first pound, and the consumer's surplus from the third pound is still less, and so forth.

The total consumer's surplus of an individual in a society is the sum of the surpluses derived by him from all commodi-

ties in that society ; and this is an important factor in comparing the economic prosperity of individuals at different times and places. *Other things being equal, the greater the consumer's surplus, the greater the prosperity.*

Total utility. Marginal utility. Price. Consumer's Surplus.

The relation of total utility to marginal utility has been already explained. (See pages 106-107). Also the relation of price to marginal utility. (See page 107). The price paid by a man for a commodity measures its marginal utility to him—and not its total utility. (And total utility of a commodity to a man *minus* the total price paid by him for it = consumer's surplus which he derives from the commodity.) In the case considered in pages 106-107

Total utility = 240

Utility of the total price paid = 180. (Total price paid = Rs. 3, and each rupee measures marginal utility i.e. 60)

Consumer's surplus (of utility) = 60

As Prof. Taussig remarks, "The conceptions of total utility and marginal utility lead to that of consumer's surplus."

Consumer's Surplus in a Market. Its measurement.

The measurement of consumer's surplus in a market is a complicated task. A market consists of many individuals with different tastes and sensibilities and different amounts of income ; and so the same sum of money spent in buying a commodity would produce different amounts of pleasure (and different amounts of consumer's surplus) to the different persons of the market. *If we neglect the fact that the same sum of money represents different amounts of pleasure to different people, we may measure the surplus satisfaction which the sale of a commodity affords to a market by the aggregate of the sums by which the prices shown in a complete list of demand prices for the commodity exceeds its selling price. (Temperament and sensibilities and also the incomes of different individuals of the market differ ; but for comparative purposes between*

two large groups of men, if we take averages sufficiently large, if we take a market consisting of a large number of individuals, it is perhaps possible to eliminate these sources of disturbance as regards the calculation of the consumer's surplus of a market. This is Marshall's opinion))

A critical examination of the Doctrine of Consumer's Surplus.

Objections to the conception of Consumer's Surplus examined.

(1) *The conception of consumer's surplus is purely imaginary, hypothetical and illusory.*

Prof. Nicholson* has raised objections to the notion of consumer's surplus. "*Of what avail is it to say that the utility of an income £100 is worth (say) £1,000 a year?*"

Marshall's reply to this criticism.

Prof. Marshall says that there would be no *avail* in saying that the utility of an income £100 a year is worth £1,000 a year; but there might be *use* in saying that a man with an income of £1,000 a year in Central Africa is not so well-off as a man with an income of £300 a year in England, when comparing, say, life in Central Africa with life in England. A man with £300 a year living in England will be able to buy many things (e.g. newspapers, cheap literature, electric light, etc.), which a man with £1,000 a year living in the wilds of Central Africa will not be able to procure for his money; so the utility of £300 a year in England is greater than the utility

* He argues somewhat in the following manner. Suppose a person has £100 a year. Rather than starve, he would give the whole £100 for his food; but his food costs him only £10, so from the purchase of his food he has a consumer's surplus of £90. Suppose similarly that his clothing costs him £10, and he gets from it a consumer's surplus of £50. Again if he could not have a house for less than £30, he would be willing to pay £30 for a house; but he is able to get a house for £10 and so in this case he obtains a consumer's surplus of £20. So he spends £10 for food, £10 for clothing and £10 for house-room, in all £30; and for that expenditure he gets a consumer's surplus of (£90 + 50 + 20 = £160). And for the remaining £70 of his expenditure he would get more consumer's surplus. Suppose in this way by including consumer's surplus, the utility of his income of £100 amounts to £1000. But such a method of measurement of utility seems to be purely hypothetical and arbitrary.

of £1,000 a year in Central Africa. [Marshall implies that in a similar manner under certain circumstances the utility of an income £100 a year in one place may be worth (say) £1,000 a year in another place or time.]

(2) *An important limitation is that the doctrine of consumer's surplus is not properly applicable to necessities.*

Rather than die of hunger, a man would offer his whole income for the minimum quantity of food. His life depends upon it. In this case the total utility and consumer's surplus from the food may be calculated as infinite.

Some economists think and think justly that it is better not to speak of consumer's surplus in connection with necessities. *Strictly speaking, the minimum necessities ward off pain, they do not yield satisfaction.* "Only where the stage has been reached of possible comfort, of some choice in the direction of expenditure, can there be anything in the nature of a real surplus of satisfaction for the consumer" (Taussig).

Taussig finds other limitations on the consumer's surplus doctrine relating to (1) *conventional necessities* and (2) articles having a high prestige value, e.g. costly stones, rare paintings and statues when there is a great fall in their prices.

(3) *The objection that the marginal utility of money may change (and may make the measurement of consumer's surplus inexact).*

In the discussion of consumer's surplus it is assumed that the marginal utility of money to the individual purchaser is the same throughout. *As a matter of fact, the marginal utility may change.*

The more a person spends on anything the less power he has of purchasing more of it or of other things—in other words, *with every fresh expenditure the marginal value of money to him increases.* Prof. Nicholson objects strongly to Marshall's neglecting in his theory of consumer's surplus the possibility that the marginal utility of money to a purchaser may be thus appreciably altered in the course of his purchases.

(*Marshall's reply*—Marshall declares that the fact noted above will not affect the substance of his argument; and that ~~there~~ there are few practical problems in which corrections to be made

under this head would be of any importance. A man does not generally spend a large portion of his income on any particular article, and so the marginal utility of money does not change appreciably).

(4) *The objection that an increase of purchases makes necessary the redrawing of the demand prices (and of the demand curve).*

Let us see how the demand prices are made out. Suppose a man would pay 20 shillings for one pound of coffee—this is his demand price for one pound; he would pay 15 shillings for the second pound, the sum of 15 shillings (which represents the *additional utility* of the second pound) is the demand price for each of two pounds; he would pay 10 shillings for the third pound, the sum of 10 shillings (which represents the *additional utility* of the third pound) is the demand price for each of three pounds, and so forth. Mark carefully that in the list of demand prices on the plan here adopted, the demand price for the second is 15 shillings which is the *additional utility* of the second pound and not the *average utility* of two pounds (the *average utility* is $\frac{20+15}{2} = 17\frac{1}{2}$ shillings), and the demand price for the third pound is 10 shillings which is the *additional utility* of the third pound and not the *average utility* of three pounds (average utility in this case is $\frac{20+15+10}{3} = 15$ shillings). And it is clear that the *additional utility* (and therefore the demand price) of the second pound remains unchanged when the man increases his purchases and buys a third pound; and so there is no necessity for redrawing the demand prices with the increase of purchases.

(The *average utility* changes and diminishes with every increase of purchases. And so the objection about the redrawing of demand prices would have been valid if the demand price set against each number of pounds of coffee represented the *average utility* and not the *additional utility*).

(5) *The objection as regards rival commodities and substitutes.*

Wheat and rice are rival commodities, they are partial substitutes for each other; and so are tea and coffee and other similar things. What about consumer's surplus in such cases?

If tea could not be had at all, people would increase their consumption of coffee and vice versa. If the people are deprived of both tea and coffee together, their loss would be greater than the sum of their losses from being deprived of either tea or coffee separately. The total utility of tea and coffee is thus greater than the sum of
(i) the total utility of tea calculated on the supposition that people can

have coffee as a substitute, and (ii) the total utility of coffee calculated on a similar supposition as to tea.

Prof. Marshall points out that this difficulty can be theoretically evaded by grouping the two rival commodities (tea and coffee) together under a common demand schedule.

(6) *The objection that the list of demand prices is often incomplete.*

It has been also pointed out that we cannot guess at all accurately how much of anything people would buy at prices very different from those which consumers are accustomed to pay for it; or in other words, what the demand prices for the commodity would be for amounts very different from the amounts of the commodity which are commonly sold. The result is that the demand prices except those in the neighbourhood of the customary price of the commodity are based more or less on mere guess-work and so our estimates about the whole amount of utility (and of consumer's surplus) of any commodity contain perhaps large elements of error.

As regards this theoretical difficulty, Marshall points out that the difficulty is *not important practically* because the chief applications of the doctrine of consumer's surplus relate to changes which would accompany changes in the price of the commodity in question in the neighbourhood of the customary price.

(7) *The objection about the difficulty of measurement of consumer's surplus in a market.*

Let us now pass from the subject of consumer's surplus in relation to the demand of an individual to the subject of consumer's surplus in relation to the demand of a market.

Marshall says that we measure the consumer's surplus which the sale of a commodity (say, tea) affords in a market (say in the London market) by the aggregate of the sums by which the prices shown in a complete list of demand prices (of different individual purchasers) for tea in the market exceeds its selling price.....

*An objection has been made to this kind of measurement of consumer's surplus in a market on the ground that allowance may have to be made in regard to different people for differences of sensibility and for differences of wealth.**

* For Nicholson's interesting remarks on this point, refer to his *Principles*, Vol. I, Chapter III. Note.

The same sum of money really represents different amounts of pleasure (and different amounts of consumer's surplus) to different people in the market according to their differences of sensibility and differences of wealth. A pound's worth of satisfaction to an ordinary poor man is a much greater thing than a pound's worth of satisfaction to an ordinary rich man ; and similarly satisfaction from the expenditure of a pound is also different according to differences of sensibility.

Marshall's reply.

In reply Marshall points out that this allowance need seldom be made in considering large groups of people (the reason being that by far the greater number of events with which economics deals affect in about equal proportions all the different classes of society so that if the money measures of the happiness caused by two events are equal, there is not *in general* any very great difference between the amounts of happiness in the two cases).

***Limitations of the Consumer's Surplus Doctrine.**

Our examination of the doctrine has shown that the theory of consumer's surplus is useful and helpful but with certain limitations.

*** Consumer's Surplus.**

Some opinions.

(1) Taussig's conclusion.

Taussig's conclusion on the whole subject of consumer's surplus is balanced and well-judged.

"How substantial is this surplus? and how far is this mode of measuring it satisfactory?" To ask these questions is only to ask, in different words, how substantial total utility is, and how far we can measure total utility

Total utility and consumer's surplus are not fanciful. That they are real is shown by their accord with familiar phrases. We often say that we get a thing for less than it is worth to us, meaning that what we give for it offers less satisfaction than the thing we buy. This is merely stated with more care and precision when we say that a consumer's surplus is secured. Tho that surplus may not be clear either at the lower end of the scale of consumption, where bare necessities alone are bought, or at the upper end, where mere vanity is satisfied, it is unmistakable in regard to what may be called the true enjoyments of life. A varied diet, abundant houseroom, clothing and fittings that permanently please the taste, the gratification which all get from the mimic arts, distraction coming after monotonous work, the pleasures of the intellect—these are things not less enjoyed when

(1) The doctrine is not properly applicable to the minimum of necessities. (2) Taussig maintains that it is not applicable also to many conventional necessities.

(3) Moreover (a) we do not get the complete list of demand prices, as regards the individual, (b) we have to make the assumption that he spends only a small portion of his income on any particular article and the marginal utility of money to him does not change, and (c) as regards measurement of consumer's surplus of a market we have practically to assume that the same sum of money represents the same satisfaction to different persons—a *precise and exact measurement of consumer's surplus* (and of total utility) *is therefore impossible*. A rough and approximate calculation is all that is possible.

Theoretical and practical importance of the Doctrine of Consumer's Surplus.

The idea of Consumer's Surplus is regarded by many economists as of much interest and importance in theoretical and practical problems.

This doctrine draws prominent attention to the very important fact that the *price of a commodity* does not always measure the satisfaction derived from it. The price may be small, and the satisfaction may

abundant and cheap. They often have a utility much greater than is indicated by the price of them. Tho their utility be not susceptible of measurement, total utility is certainly large and consumer's surplus is correspondingly large."—Taussig, *Principles of Economics*, vol. 1, 1925, pages 125, 129.

(2) J. M. Keynes and F. Y. Edgeworth on the Consumer's Surplus Doctrine.

J. M. Keynes and F. Y. Edgeworth, distinguished British economists and admirers of Marshall's notable work in Economics, have high appreciation of Marshall's Doctrine of Consumer's Surplus.

Edgeworth emphatically points out that Marshall himself fully recognised the important limitation on his doctrine depending upon changes in the marginal value of money—"before the publication of the *Principles* Marshall quite understood—what the critics of the doctrine in question have not generally understood, and even some of the defenders have not adequately emphasised—that the said measurement applies accurately only to transactions which are on such a scale as not to disturb the marginal value of money"—*Memorials of Alfred Marshall* edited by A. C. Pigou, 1925, page 44 (footnote).

We have also the admission by J. M. Keynes—"The special conception of Consumers' Rent or Surplus, which was a natural development of Jevonian ideas, has perhaps proved less fruitful of practical results than seemed likely at first."—*Memorials of Alfred Marshall*, page 44.

be large—there may be a large consumer's surplus. A plentiful supply of good food, sufficient clothing, adequate house-room, reasonable amounts of artistic and intellectual enjoyments—these things yield much greater satisfaction than the price paid for them, they give a large consumer's surplus.

The Consumer's Surplus Doctrine enables us to estimate some of the benefits which a person derives from his environment or conjuncture.

(a) *The importance of Consumer's Surplus in economic comparisons between different periods and different countries.* While comparing the condition of the working class (or any other class) of a country at one time with the condition of that class at some other period or in some other country, we must take into consideration consumer's surplus. Other things being equal, the greater the consumer's surplus, the better is the economic condition of the class.

(b) *The importance of Consumer's Surplus in connection with the effects of price changes and of taxes and bounties.* In such important problems as the effects of (i) the raising and the lowering of prices by private monopolies or public undertakings like State Railways, municipal waterworks and tramways and of (ii) Government taxes and bounties, we shall do well to pay very particular attention to Consumer's Surplus.

A monopolist who while seeking his own profit has also some regard for public welfare will fix such a price for the commodity as will save some of the consumer's surplus of the community. (Cf. Marshall—*Principles*, Bk. V. Chapter III.)

State railways and other public businesses have to determine the prices at which they will sell their services to the public; and they should determine prices in such a manner that the income of the State is not derived at more than proportionate loss of consumer's surplus to the public. So far as possible, the expenditure by the Government on *bounties* should be so regulated as to yield more consumer's surplus than the expenditure on the bounties; and the State in levying a *tax* must look to it that what the State gains by the tax, more than that is not lost by the public in consumer's surplus.

Of course the practical importance of consumer's surplus in connection with such problems is much diminished by the fact that suitable statistical materials are at present not available. But as statistics are better organized, the practical importance of the discussion of consumer's surplus will steadily increase.

Consumption and Production.

The relation of Consumption to Production is of great importance.

(Consumption leads to the destruction of utilities, and it is the object of production to produce utilities to replace this destruction.

Consumption is a *stimulus to production. It is the growth in the intensity and variety of the demands of the consumers that leads to the increase of production and thus of the employment of labour.

Although in one way consumption through demand determines production, in another way production through the conditions of supply determines consumption. The price of a thing is as important as its utility in determining what quantity of a thing would be consumed within a country ; if the cost of production of a thing is cheapened and if it is sold at a cheaper price, it will be sold in larger quantities, its consumption will increase—cheap production leads to larger consumption ; and articles which have a large cost of production will be gradually replaced generally by rival articles with a lower cost of production.)

Consumption and Distribution.

The connection between Consumption and Distribution is also very intimate—the consumption of wealth by a man obviously depends upon his income. For example, while incomes are unequal, some very large and some small, then there is abundant scope for the more expensive forms of luxuries which will be consumed by the persons with larger incomes. Suppose, however, socialism is established and all incomes are reduced to a moderate level ; there would be now no scope for the consumption of the more expensive luxuries by an individual for himself because he would not have the income for it.

Consumption and Social Progress.

The study of consumption throws great light upon social progress. The consumption of individuals and of nations depends upon the existing distribution of wealth ; statistics of consumption are very useful in indicating the wealth of various

* See Patten's theory p. 96.

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classes, and statistics continued for a certain period will help us to a large extent to decide whether society is progressing or declining from the economic point of view.

The larger and the more well-regulated is the consumption of individuals and classes, the better it is generally for society ; social progress depends upon adequate consumption, and it also depends upon well-regulated consumption. Wasteful consumption and also harmful consumption (e.g. the use of intoxicants, etc.) are not conducive to social welfare.

Summary.

1. Consumption means the consumption (*i.e.*, destruction) of utilities. It is the use of goods in the satisfaction of human wants.

2. Wealth is the substance*of which *utility* is the attribute. Anything which satisfies a human want is said to have utility. To a man possessing a commodity, initial utility is the utility of the first unit of the commodity; total utility is the utility of all the units, and marginal utility is the utility of the unit which is at the margin of his purchase.

3. As regards human wants, we have to notice—(i) their infinite variety, (ii) the satiability of each want, (iii) some wants are competitive, and (iv) some are complementary.

4. Laws of Consumption—

(i) An increasing supply of a commodity means a diminishing utility for each successive unit. Generally speaking, the more we have of a thing, the less we want still more of the thing. (**The Law of Diminishing Utility**).

(ii) The amount of a commodity demanded increases with a fall in price and diminishes with a rise in price. (**The General Law of Demand**).

(iii) In general, the elasticity of demand for a commodity within any class of people will be great for high prices, and the elasticity will be great or at least considerable for medium prices and the elasticity of demand will fall as the price falls. (**A Law about the Elasticity of Demand**).

(iv) A man who has a commodity capable of being put to several uses, tends to distribute it among these *uses* in such a way that the commodity has equal marginal utility in each of the uses. (**The Law of Equi-marginal Utility**).

5. From the standpoint of consumption we have to distinguish between necessities, comforts and luxuries.

Within limits, luxuries on the part of the rich as well as on the part of the poor have to be carefully guarded against.

6. Generally, the smaller the income of a man the greater is the proportion of expenditure on subsistence (*i.e.*, necessities), and the smaller is the proportion of expenditure on the comforts and decencies of life.

7. Consumer's surplus from a commodity refers to the surplus of utility over its cost.

Within limits the concept of consumer's surplus is useful and even invaluable. It however does not apply to the minimum of necessities, and it can be only roughly measured.

8. Consumption is the end of production. In fact consumption (want-satisfaction) is the motive which impels most men to most economic activity.

Hence the importance of consumption and its place as the first division of Economic Science.

Questions.

1. What is Consumption? What is Utility? Marginal Utility? (C. U. Hons. 1919).

2. Write a note on the characteristics of human wants.

3. State and explain the Law of Diminishing Utility. Give illustrations. (A. U. 1899).

4. (a) Explain Demand Price, Marginal Demand Price, Demand Schedule of a market.

(b) Explain carefully what is meant by an increase of demand. Is it possible under certain circumstances for the demand to increase and yet for market price to remain unaltered? If so, explain the circumstances. (A. U. 1911 and 1919).

5. State the law of Demand. (C. U. 1914).

Upon what experience is it based?

6. Explain the Elasticity of Demand and show how it may be measured (C. U. 1914).

Show the importance of Elasticity of Demand in theoretical and practical problems. (C. U. 1915).

7. (a) Give Marshall's general rule about the Elasticity of Demand.

(b) What are the things having an elastic demand? And of what articles would you expect the demand to be inelastic? Give illustrations. (C. U. 1916).

What do you mean by 'elasticity of demand'? Would the demand for a commodity be elastic or inelastic (a) if it is one of the necessities of life, (b) if there are many possible uses for it, (c) if it has many substitutes, (d) if its use constitutes a habit? (C. U. 1925).

Give Indian examples of the principle of Elasticity of Demand.

8. State and explain the Law of Equi-marginal Utility.

The Law of Equi-marginal Utility does not compel people to spend money so as to realise equal marginal utility from each use. Is it correct then to speak of it as a Law?

9. Distinguish between necessities for existence, necessities for efficiency, and conventional necessities.

Write a note on luxury, its use and abuse. Is there any truth in Voltaire's remark "The superfluous is also very necessary"?

Or,

What is a luxury? Under what circumstances is luxury justified? (C. U. 1917).

Is the consumption of luxuries beneficial in an economic sense to society? (C. U. 1924).

10. (a) Write a critical note on Consumer's Surplus. (C. U. 1913, 1914, 1931).

(b) Explain what is meant by Consumer's Surplus.

Show that under certain circumstances it is capable of measurement.

(c) Indicate the importance of the Consumer's Surplus concept in theoretical and practical problems.

11. Analyse the following concepts, and point out how they are interconnected: Marginal utility, total utility, price and consumer's surplus. (C. U. 1922).

12. Describe the connection between production and consumption (C. U. 1924).

BOOK III.

PRODUCTION.

CHAPTER I.

What is Production?

(In Economics production stands for production of utilities.

Man produces utility only. Man cannot create material things out of nothing—he cannot create matter; he only produces utilities by changing the form or arrangement of matter already existing, e.g. he produces a knife by changing the arrangement of matter in a piece of steel, or he produces a bench by changing the arrangement of matter in a piece of wood.)

In the words of Marshall, "All that man can do in the physical world is either to re-adjust matter so as to make it more useful, as when he makes a log of wood into a table, or to put it in the way of being made more useful by nature, as when he puts seed where the forces of nature will make it burst into life."

The work of production consists

(i) in producing *form utilities*, i.e. changing the form of things, e.g. manufacturing a chair of wood ;

(ii) in producing *time utilities*, keeping things for a time and in that way giving them an additional utility, e.g. in preserving fish or meat so that they will last for some time ;

(iii) in producing *place utilities*, i.e. in giving things an additional utility by removing them from a place where they are less wanted to a place where they are more wanted. The man who transports rice from districts where rice is abundant to districts where rice is wanted gives to the rice 'place utility'.

Production or the making of utilities includes in :

(1) obtaining from land or sea or rivers or mines, etc., things which grow there or are found there, e.g. farming, fishing, mining, etc.

(2) manufacturing of things, e.g. the manufacture of cloth, of knives, of chairs, etc.

(3) transporting from one place to another by railways, by steamships and in other ways ;

(4) trading or the performance of the function of distributing goods among those persons who want the goods ;

(5) directly supplying services to consumers, e.g. singing, acting, domestic service, etc.

The *carpenter* who makes a bench out of a piece of wood is a producer, because he gives an additional utility to the piece of wood. The *fisherman* is a producer, because he produces an additional utility by taking the fish from the sea where it is not useful to man, to a place where it is wanted. And the *railwayman* who transports the fish from one place to another, and the *trader* who takes fish from places where it is less wanted to places where it is more wanted—they also, each of them, produce utilities. Hence *the man who transports things, and the trader—they also are producers.*

Agents of Production.

Earlier economists have generally spoken of three agents of production, viz. **Land (Nature), Labour and Capital** ; but many modern economists add **Enterprise or Organisation** as another agent, specially in a developed economic society.

(1) Land (Nature).

The word 'Land' is used by economists in this connection to mean not land in the popular sense of the word, but *the whole of animate and inanimate Nature (exclusive of man)*, the whole of the materials and the forces, which Nature gives freely for man's aid, e.g. agricultural land, building land, etc., forests, rivers, seas, mines, wind, light, heat, attraction of gravitation, etc.

(2) Labour.

Labour as an agent of production includes human activities of all kinds, physical as well as intellectual—labour is supplied by *man*. The efficiency of production depends upon 'land,' and it also depends greatly upon the efficiency of labour.

(3) Capital.

It has been already pointed out in Book I that Capital is that part of the wealth of a man which is used by him in the production of wealth. In a primitive stage *Man* gets things from Nature, with little or no assistance from Capital; with the progress of industrial civilization, *Man* requires the help of more and more Capital to increase his power of getting things from Nature, to increase his efficiency of production; and other things being equal, the greater the amount of Capital (tools, machinery, raw materials, etc.), the larger will be the total volume of production.

In a modern industrial society, Capital helps in production by

- (i) supplying tools, machinery, buildings required for the purpose of production;
- (ii) supplying raw materials for the purpose of production;
- (iii) supplying the means out of which labourers will be maintained when they are engaged in the work of production.

Capital is hence regarded as a *third agent in production*.

(4) Enterprise or Organization.

Recent writers add a *fourth agent of production*, viz., *Enterprise or Organization*. Organization refers to the organizing of land, labour and capital for the work of production. Organization aids knowledge; and it helps us to subdue Nature and force her to satisfy our wants.

Uncertainty-bearing as a factor of production.

Pigou.

Professor Pigou in the *Economics of Welfare* (Appendix I) treats uncertainty-bearing as a separate factor of production.

"It is customary in economic discussion to class together as factors of production, along with the services of Nature, waiting and various

sorts of mental and manual labour. In a world in which all future events were perfectly foreseen this catalogue would be substantially adequate. But in the actual world some future events are not perfectly foreseen. On the contrary, in the vast majority of enterprises, in the conduct of which resources are waited for, they are also exposed to uncertainty; they are turned, that is to say, into a use, the result of which cannot be certainly predicted. In these circumstances it is proper that there should be added to the list of factors of production enumerated above a further group comprising various sorts of uncertainty-bearing.Uncertainty-bearing, though generally associated with waiting, is analytically quite distinct from it..... Uncertainty-bearing is an independent and elementary factor of production standing on the same level as any of the better-known factors."

The agents of production ultimately reducible into two.

According to the classical economists there are three agents of production; and according to recent writers the agents of production are four.

These four agents of production are ultimately reducible to two, viz., 1. Land (Nature), and 2. Labour (Man).

Capital is an intermediate product of Nature and Man, nothing more. Capital is the product of Land (Nature) and Labour (Man). Man by the application of Labour to Land creates wealth, and he saves part of the wealth that is produced, and uses this saving as Capital. Again Enterprise or Organization is only a form of labour, it consists in the labour of organizing. *So the ultimate agents of production are Land (Nature) and Labour (Man).*

Of Nature and Man, Man is the active agent and is thus more important than Nature. "*From every point of view, man is the centre of the problem of production as well as that of consumption.*" (Marshall).

Man alone plays an active part in production, and on this ground Prof. Gide holds that Labour (Man) alone is an agent of production, in the strict sense of the word. Nature plays a purely passive part, and so does Capital. Gide prefers to call Nature and Capital *factors of production*; Labour is a factor, and something more, it is an agent.

Supply Price..

The supply price of a commodity depends upon the conditions of production.

As the *demand price for a certain amount of a thing during*

a given period (*e.g.* a year) is the price which will attract *purchasers* for that amount of the commodity ; so the *supply price of a certain amount* of a commodity during a given period is the price which will be sufficient to call forth that amount of supply of the commodity.

Many different things are required to produce a commodity ; and so the supply price of a given amount of that commodity will be the sum of the supply prices of the different things required to make that amount of the commodity. The supply price of a thousand yards of silk cloth will be the sum of supply prices of the different amounts of the different things (*e.g.* the price of raw silk, the prices of coal and other materials required for the process of manufacture, the wages of labourers engaged in manufacturing the silk, the earnings of management, interest and insurance on capital, etc.) required to produce those 1,000 yards of silk cloth.

We shall see later on how the relations between the Supply Price and the Demand Price of a commodity (or a service) influence and determine its value.

Summary.

Man produces utilities only.

Production means not the creation of matter but the creation of utilities relating to existing matter.

The work of production includes the production of (a) form utilities, (b) time utilities, and (c) place utilities.

The agents of production are four, *viz.*, (1) Land, (2) Labour, (3) Capital and (4) Organization. These four agents are ultimately reducible to two—Land and Labour; for Capital is the product of Land and Labour, and Organization is only a form of Labour.

Book IV deals with production or the supply of things. The *supply price* of a certain amount of a commodity is the price which will be sufficient to call forth that amount of supply of the commodity.

Questions.

1. Define production.

"Man produces and consumes utilities only"—Explain.

Is the trader a producer? The railway man? The physician? The actor?

2. What are the agents of production? Of these what are the ultimate agents?

3. Explain Supply Price.

CHAPTER II.

LAND (NATURE).

The Law of Diminishing (i.e. non-proportional) Return from natural agents.

First, we take up the law of production from natural agents.

This is the law of diminishing return and it should be studied carefully. For its influence extends over a very wide area, and its importance is great not only in the theory of production, but also in the theory of distribution. It belongs to the very foundations of Economics and is one of the fundamental principles of the science.

The Law is this: (When a farmer applies more capital and labour to a piece of land, he gets an increase of product from the land. The increase of product is (in general) less than in proportion to the increase of capital and labour—this is the law of diminishing return. An increase of product is obtained by an increased application of labour and capital to land (and other natural agents), but after a certain point (i.e. after a certain amount of labour and capital has been applied, the amount depending upon the circumstances of the case) each successive unit of the product is obtained at a greater cost than the preceding unit. After this point, the cost of each successive unit of product increases. In other words, with the same cost, there is a smaller product (i.e. a diminishing return) than before.)*

All the wheat required in a country is not produced from the best acre of land in that country. Why? Because of the law of diminishing return. All the iron ore required in a country is not produced from the best iron mine of that country. Why? Again because of

* The law as applied to the cultivation of land is the practical experience of farmers of all countries and of all times. Economists have not discovered the law. They have only made it definite and have deduced important conclusions from it. (For the history of economic ideas relating to Diminishing Returns, see Cannan, *Theories of Production and Distribution*, Chapter V. See also Carver's *Distribution of Wealth*, Marshall's *Principles*, Book IV, Chapter III, or Marshall's *Economics of Industry*, Book IV Chapter III).

the law of diminishing return. And this we find as regards the production of agricultural products and minerals from land, and also as regards production from other natural agents.

Suppose there was no law of diminishing return. Suppose an increase of capital and labour applied to a piece of land could produce a proportionate increase of product—suppose by doubling labour and capital a double product could be secured, ten times the labour and capital could produce ten times the product from the same piece of land, etc. Then by applying sufficient labour and capital all the produce required by a country could be produced from a single acre of land.

It is only because of the operation of diminishing returns that all the agricultural produce required in a country cannot be produced from a single acre of land, and all the iron ore wanted cannot be raised from the best iron mine in the country.

An illustration.

Every practical farmer acts upon this law of diminishing return, though perhaps he has not heard of the name given to it by economists. M. Jourdain in Moliere's well-known play talked prose without knowing it. And the practical farmer will be surprised to learn that he follows economics all his life, without knowing anything of economics and economists.

The practical farmer after applying some labour and capital to the best acre of land, will take more land and apply the rest of his labour and capital to that land. The reason is that he knows that there is a *limit* beyond which further expenditure of labour and capital even upon the best acre of land will not be profitable. This is because of diminishing returns from that best acre of land after a certain point.

Suppose the farmer is cultivating jute in Bengal ; he estimates that with a small expenditure of capital and labour (Rs. 10 worth of capital and labour) per bigha,* that is, if he ploughs his soil hurriedly and insufficiently and if he uses very little manure even then a certain amount of product will be raised from the bigha. If he uses more capital and labour (Rs. 20 worth of capital and labour) per bigha, if he ploughs his land more thoroughly and uses manure, the produce will be perhaps greatly increased, and the increase in produce will be

* A bigha of land (in Bengal measure) = 3025 Sq. Yards.

perhaps more than in proportion to the increase in expenditure of capital and labour—he will get increasing returns. He may sometimes get also constant returns. Sooner or later, however, the point of diminishing return is reached.

If he goes on to spend more and more capital and labour upon that bigha of land, he finds that *a point is reached after which* increased expenditure of capital and labour is followed by less than proportionate increase in the amount of produce raised—he will get *diminishing returns* (and not increasing or constant returns).

(The man applies Rs. 10 (or multiples of Rs. 10) worth of labour and capital at a time. Suppose when he applies the first ten rupees of labour and capital, he gets a product of 4 maunds of jute. And when he spends Rs. 20 (Rs. 10 + Rs. 10), the amount of jute produced is 9 maunds, application by him of a second sum of Rs. 10 to the cultivation of that bigha has increased the product by 5 maunds (not 4 maunds, nor 3 maunds etc.)—here he has *increasing returns*. For the second sum of Rs. 10 has added *more* to the production than the first sum of Rs. 10. And when he spends Rs. 30, he gets 11 maunds, the application by him of a third sum of Rs. 10 to the cultivation of the same plot of land has increased the product from 9 maunds to 11 maunds, it has added 2 maunds to the production—here he has *diminishing returns*, the increase of product from the land is not proportionate to the increase of capital and labour. The third sum of Rs. 10 has added *less* to the production than the second sum of Rs. 10

10 Rs. worth of 4 maunds of jute.

labour and capital.

20 " " 4 + 5 = 9 " " (Increasing Return).

(20 = 10 + 10)

30 " " 4 + 5 + 2 = 11 " " (Diminishing Return).

(30 = 10 + 10 + 10)

And if the farmer goes on increasing his expenditure of capital and labour, he will find that the increase in the capital and labour applied will cause a less than proportional increase in the amount of produce raised from the land.

The Law relates to the *amount* of the produce.

The Law does *not* refer to the *price* of the produce.

[If the price of the produce is high owing to strong demand for the produce, then the farmer will continue to increase his expenditure of capital and labour upon the land after the point of diminishing returns is passed, because the high price of the product will remunerate him even when the increase in the amount of produce is less than proportionate to the increase in the amount of capital and labour invested in the cultivation of his land.]

1. (A) Marshall's provisional statement of the Law of Diminishing Return.

The law of diminishing return as applied to land is thus *provisionally* stated by Prof. Marshall:

"An increase in the capital and labour applied in the cultivation of land causes *in general* a less than proportional increase in the amount of produce raised, unless it happens to coincide with an improvement in the arts of agriculture."

Limitations relating to the Law of Diminishing Return.

The two words '*in general*' in the statement of the Law are highly significant and important.

We have to discuss the limitations upon the Law of Diminishing Return implied by these words.

The expression '*in general*' means that there is a *general tendency to diminishing returns*, but that this tendency may be counteracted under certain circumstances and in certain exceptional cases (these *exceptions to the Law are the limitations to which the Law is subject*). It means that the Law of Diminishing Return does not apply to all cases of increase in the capital and labour applied to the cultivation of land, but that *the law is generally applicable; and though the law may be held in check for a time in certain exceptional cases (which appear to be exceptions to the law and which are described below as limitations to which the law is subject), the law will ultimately prevail even in these cases if the demand for agricultural produce increases without limit.*

The limitations (or exceptions) to the Law implied under the words 'in general' may be stated in the following manner:

(i) *Increasing return to an increase in the capital and labour applied to land may occur before the point of diminishing return is reached.*

The increasing return of product from the land in that case is due to the fact that the insufficiency of labour and capital spent at first made it impossible to cultivate the land properly, and that the increased application of capital and labour leads to increasing returns by making satisfactory cultivation possible. *The increasing returns will continue only for a time.* If the farmer goes on increasing his doses of capital and labour, he will after a time reach the point of diminishing returns.

(ii) *A second limitation results from improvements in the arts of agricultural production in a country.* In each stage of the arts of agricultural production, there is a point (i.e. point of diminishing returns) beyond which further investment of capital and labour yields diminishing returns; but the progress of agricultural knowledge (agricultural chemistry, etc.), invention of improved agricultural machinery and the discovery of better agricultural methods and processes are constantly improving the arts of agriculture. Suppose the point of diminishing return is reached in any particular stage of agriculture. Then improvements in the arts of agriculture take place.

Improvements in the arts of agriculture lead to increasing return (instead of diminishing return) for a time by making it possible to secure by greater expenditure of labour and capital a more than proportionate increase in the amount of the agricultural produce; but in the new stage of the arts of agricultural production brought about by the agricultural improvements if the application of additional doses of capital and labour continue, after a time, sooner or later, the point of diminishing return will again be reached.

[In these cases, ultimately the law of diminishing return operates. The limitations refer to cases where the Law of Diminishing Return is held in check temporarily; and even as regards these cases the law will ultimately prevail if a very great increase in the demand for agricultural produce leads to the application of more capital and labour.]

I. (B) Marshall's final statement of the Law.

In view of these limitations,

Marshall *finally* thus states the law in the following two parts :

(i) First, although an improvement in the arts of agriculture may increase the return which land generally affords to any given amount of capital and labour ; and although the capital and labour applied to any piece of land may have been so inadequate for the development of its full powers that some further expenditure on it even with the existing arts of agriculture would give a more than proportionate return ; yet *these conditions are rare in an old country, and except when they are present, the application of increased capital and labour to land will add a less than proportionate amount to the produce raised*, unless there be meanwhile an increase in the skill of the individual cultivator.

(ii) Secondly, *whatever may be the future developments of the arts of agriculture*, a continued increase in the application of capital and labour to land must *ultimately* result in diminution of the extra produce which can be obtained by investing an extra amount of capital and labour.

Or, in other words, *the Law of Diminishing Return operates in agriculture except under certain exceptional conditions rare in an old country. And though the Law may be held in check temporarily in some cases, it will be in operation ultimately even in these cases.*

II. A brief statement of the Law of Diminishing Return relating to production from land.

The Law of Diminishing Return relating to production from land may be more shortly stated as follows :

At any given stage in the art of agriculture, there is a point in the investment of labour and capital upon the land (this point is known as the point of diminishing returns) beyond which further investment of capital and labour will yield diminishing returns, i.e. less than proportionate returns.

*Doses of Labour and Capital.

The capital and labour applied to land may be looked upon as consisting of equal successive amounts or Doses. (*A Dose of capital and labour may be taken to stand for £1 or Rs. 10, or any other unit of money distributed according to the necessity of the case between (a) hire of labour, (b) payments in connection with the use and the wear and tear of capital, and (c) also payment for management—a Dose of capital and labour thus stands for one unit of money's worth of labour and capital*).

Let us take a Dose of capital and labour to stand for ten rupees spent in hiring labour, and in paying for the use and wear and tear of capital and also in paying for management.

The return to the first few Doses of labour and capital applied to the cultivation of land may be small and a number of Doses after the first few Doses may get increasing returns ; but assuming that the arts of agriculture remain unchanged, with the application of more and more Doses of labour and capital a point (i.e. the point of diminishing return) will be reached, sooner or later, after which any further Dose will yield diminishing returns.

Marginal Dose. Marginal Return. Margin of Cultivation.

The farmer does not stop applying labour and capital to the land as soon as he has reached diminishing returns.

The farmer applies some Doses after the point of diminishing return is reached ; and with diminishing returns from each successive dose, at length he hits upon a Dose which just remunerates him for the expense incurred in connection with the Dose. *And he will apply doses no further. The Dose which just remunerates the farmer by its return for his outlay upon the Dose is the marginal Dose ; and the return to the marginal Dose is called the marginal return.* The land which just pays the expenses of cultivation and yields no surplus for rent—this is the land to which the marginal dose can be

* The expression 'a dose of capital' was introduced into Economics by James Mill. Prof. Marshall speaks of 'a dose of labour as well as of capital.'

regarded as having been applied, (as the return to the marginal dose only pays the expenses of the dose and leaves nothing for rent).

Land to which the marginal dose is applied is called *land on the margin of cultivation*; land on the margin of cultivation may be poor land and the marginal dose may be the first dose applied to it, or this land may be rich land to which the marginal dose is applied after the application of some preceding doses. (The marginal dose applied to poor land is said to be applied on the *extensive margin* and the marginal dose applied to the rich land is said to be applied on the *intensive margin*).

The marginal dose does not mean the last in time. *The marginal dose simply means that dose which is on the margin of profitable expenditure*;—which produces a return sufficient to cover the expense of the dose i.e. which gives the ordinary returns to the capital and labour of the farmer without providing any surplus.

(The return to each of the earlier doses is greater than the return to the marginal dose (because of diminishing returns); and the expense of each of the earlier doses is equal to the expense of the marginal dose. The same expense is incurred in connection with each of the doses.

So from each of the earlier doses the farmer gets a surplus above the expense incurred by him in connection with the dose. The total surplus derived by him from all these doses is *the producer's surplus (or surplus produce of the land)*.

This surplus produce is economic rent; and economic rent under certain conditions which will be outlined in the Book on Distribution becomes the rent which the owner of the land can get from the tenant who cultivates the land.

A note on the relativity of fertility and of good cultivation.

In connection with the Law of Diminishing Return in agriculture, economists discuss the relativity of these terms.

Fertility is a relative term.

There is no absolute measure of the fertility of the land—lands which are more fertile than other lands under certain circumstances, may become less fertile than those lands under different circumstances.

Fertility is relative to a particular time and place—a change in the circumstances (e.g., an increase in the amount of capital and labour, or a change in agricultural skill and enterprise of the people) may change the order of fertility.

Of two pieces of land A and B, when they are both slightly cultivated with comparatively small expenditure of capital and labour for each unit of land (i.e. when the cultivation is extensive), A may be more fertile than B; when A and B are both thoroughly cultivated with comparatively large expenditure of labour and capital, (i.e., when there is intensive cultivation), the order of fertility may change and B may become more fertile than A.

The order of fertility of different soils is often changed by changes in the arts and methods of cultivation, and in the comparative values of different crops, etc. Indian students will easily find illustrations from Indian conditions. Marshall gives an English example—light soils in England were regarded as less fertile than clay soils at the end of the 17th century, but a change in the method of cultivation by which wheat is grown well on light soil by preparing the way with clover has made the light soil more fertile and of greater value. The order of fertility of different kinds of land is also liable to change from changes in the general arts of production and the general economic condition of the people.

Good cultivation is a relative term.

Like fertility, good cultivation is also something not absolute, but relative to the special circumstances of a particular place and time.

A heavy expenditure of capital and labour on one acre of land is good cultivation for the Indian farmer who produces early vegetables (selling at high prices) for a big city near at hand—this yields him large profits. Such heavy expenditure is not good cultivation for a farmer producing corn or some cheap food remote from railways—the price of the produce per acre will not be sufficient to cover his heavy expenses.

The statement of the Law of Diminishing Return by earlier English economists as corrected by recent writers.

*Ricardo and other early English economists stated the law of diminishing return in a form which was "inexactly worded." They seemed to imply that the early settlers in a country always selected the most fertile land first and that later on as population increased, worse and worse soils also had to be brought into cultivation. *The inexactitude lies in this that*

* "The most fertile and most favourably situated land will be first cultivated"—Ricardo, *Principles of Political Economy*, Ch. II.

these earlier economists speak wrongly as if fertility is absolute, as if the lands chosen at first by the settlers in a new country are absolutely the most fertile lands and continue to be most fertile for ever. The fact is otherwise.

Recent writers* (Marshall and others) point out—*there is no absolute standard of fertility.* The early settlers select first those lands for cultivation which are not absolutely the most fertile (no land is absolutely the most fertile, fertility being only relative) but which are most fertile, relatively to their circumstances,—*e.g.* their resources of labour and capital, their communications with markets and other things. The settlers are also guided in their choice of lands by the need for security against wild animals, savages and other enemies, etc.

After a time when the circumstances are changed, lands which at an earlier stage were relatively more fertile may cease to be so.

Wide extent of the application of the Law of Diminishing Return.

(1) We have seen the operation of diminishing returns in *agriculture*.

(2) The law also operates in *river fisheries*; and in river fisheries after the point of diminishing return is reached, the returns to successive doses of labour and capital decrease rapidly.

[As regards *sea fisheries* some hold that the law of diminishing return operates, others hold that it does not; perhaps the latter are right—the sea is vast and fish multiply very rapidly and so diminishing return is inoperative here, practically speaking.

(3) The law of diminishing return also operates as regards production of minerals from *mines*—other things being equal (*i.e.* if there is no improvement as regards the arts of mining and if there is no development in the science of mineralogy and so on), returns to additional doses of capital and labour will after a certain point diminish.

* (See also Cannan—*Theories of Production and Distribution*, Ch. VIII).

[It must be noted that the supply of agricultural produce is a "perennial stream," the soil would produce agricultural products for all time; mines are as it were "Nature's reservoir" (Marshall) holding a fixed quantity of minerals and so they are exhausted when this fixed quantity of minerals is taken out in twenty years, ten years or in five years by very large applications of labour and capital. It will be thus seen that the production of minerals from mines has an essential difference from production in agriculture. *Mines are exhaustible* and they are exhausted when the fixed stock of minerals in them is taken out, *while soil in agriculture will retain its fertility for ever* if properly cultivated.]

The law of diminishing return applies also to other natural agents; and with reference to natural agents it can be generally stated as follows :—

At any given time and place, other things being equal, there is a point in the investment of labour and capital upon *natural agents*, beyond which additional doses of labour and capital will yield diminishing return (i.e., less than proportionate return).

(4) *The law of diminishing return applies not only to agriculture, fisheries, mineral production, it is also applicable under certain circumstances to manufacturing and other industries as well.*

The law of diminishing return states that at any given time and place, other things being equal, for the purpose of agriculture there is a point in the investment of labour and capital upon a given piece of land beyond which additional doses of labour and capital will obtain diminishing return.

Now this proposition holds true also of manufacturing, only the point at which diminishing returns begin in manufactures is more distant than the point at which diminishing returns begin in agriculture. In other words, *more labour and capital can be applied upon a given piece of land in manufactures than in agriculture before the point of diminishing returns is reached*—but the law is all the same applicable to agriculture as well as to manufactures.

Walker on the application of diminishing returns to manufactures.

Walker discusses the application of the law of diminishing returns to manufactures from a different standpoint. He says not only is the whole body of agricultural produce subject to its influence, but the raw

materials of manufacture and subject-matters of all trade and transportation coming originally from the soil are affected in value by the increasing difficulty which attends each successive increment of product.

But while no part of the field of production lies beyond the shade of this primary condition (*viz.* the law of diminishing return), *various classes of products are affected by the law in very different degrees, as they stand nearer or farther from agriculture or the purely extractive industries (e.g. mining).*

Walker goes on to point out that every product of iron is in some measure subject to the influence of this law, because if a greater and still greater quantity of iron ore is to be extracted from a given number of mines, the increased amount of iron ore will be procured only at a more than proportionate expenditure of capital and labour, *i.e.*, there will be diminishing returns.

Now the iron as ore or as an ore product will be fully subject to this law. It will be different however as regards manufactured products made of iron which stand more and more distant from the iron ore stage, i.e., which have been highly manufactured and the price of which includes a large cost of labour in proportion to the cost of the raw material. The influence of the law of diminishing return on these manufactured products will be small; the iron is manufactured by mechanical process into scissors, pen-knife, blades, fine screws, etc., and the first cost of the raw material (iron) forms only a small part of the total cost of the manufactured product, the cost of labour being much the greater part of the total cost. It has been calculated by Mr. Babbage that iron of the value of one dollar is manufactured into best scissors worth about 447 dollars or knife blades worth 657 dollars. Now as regards knife blades the only part of the 657 dollars worth of knife blades the cost of which would be affected by diminishing return from mines is the raw material (iron of knife blades worth one dollar and also the cost of the coal, etc., required for the process of manufacture). And so an increase of the difficulty of mining due to diminishing returns which would increase the price of iron very largely, would affect the price of scissors or knives very slightly.

(5) *Law of diminishing return in connection with building sites.*

The law of diminishing return applies also to building sites. If additional doses of capital and labour continue to be invested for building purposes upon a piece of land, (say in the business quarter of a town) then *sooner or later a point will be reached after which additional doses of labour and capital will yield diminishing returns, i.e. less than proportionate returns of convenience.* This will happen in the following way. Doses of capital and labour invested in constructing the first story of a

building upon that piece of land, even in constructing the second story and third story, may not lead to diminishing returns ; but the fourth and the fifth stories will not be perhaps so convenient for business purposes as the first three stories and so the law of diminishing return will operate as regards the doses of capital and labour spent in building the fourth and the fifth stories.

The ways in which the tendency to diminishing returns in agriculture, etc. (as regards the returns of amounts of produce to additional doses of capital and labour) may be counteracted for a time:

1. *As regards agriculture within any country the tendency to diminishing returns may be counteracted for a time* (though of course not permanently) and the point of diminishing returns pushed back in the following ways :

(i) By the development of the full power of the soil with the use of more adequate amounts of labour and capital required for the thorough cultivation of the land.

(ii) By improvement in the arts of agricultural production, *e.g.*, the discovery of better agricultural methods and processes, a more satisfactory rotation of crops, better fertilisers or manures, the use of more efficient machinery and so on.

(iii) The operation of the law of diminishing returns may be counteracted to some extent by improvements which make transport cheaper and more rapid between that country and other countries, *e.g.*, developments relating to railway and steamship transport.

The immense development in transport facilities between England and America and also between England and other European countries has enabled England to get a very large proportion of her food-supply from abroad ; and so it has reduced in a large measure the necessity of applying capital and labour to English land producing food-crops, even beyond the point of diminishing returns. If these immense developments in transport facilities had not taken place, then the law of diminishing return would have operated in England much more powerfully than it operates just now.

It should be noted that the above three cases relate to the *amount* and *not to the value of the produce*—the tendency towards diminishing (or non-proportional) returns as regards amounts of the produce may be counteracted for a time in the ways enumerated above.

It should be remembered carefully that though the tendency can be counteracted for a time, ultimately the tendency to diminishing return will prevail if further investment of labour and capital continues.

2. *As regards river fisheries and mines within any country, the tendency to diminishing returns may be counteracted for a time by (i) improvements in the art of production from fisheries and improvements in the arts of mineral production, and (ii), also by development of communications opening up foreign sources of supply.*

And so on.

Law of Diminishing Return in relation to the Theory of Population.

See Book III, Chapter III.

Law of Diminishing Return in relation to Rent.

See Book V, Chapter II on *Rent*.

The Law of Diminishing Return and India.

India is an old country with a large population, and the population is predominantly agricultural—the vast majority of the Indian population being engaged in agriculture. So in Indian agriculture there is a strong tendency to diminishing return; wide-spread, almost universal destruction of Indian handicraft manufactures, cottage and village industries (and this is due to the unrestricted competition of foreign manufactures) is driving more and more people to agriculture and is increasing the tendency (already strong) to diminishing returns in Indian agriculture, and the tendency to diminishing returns under present conditions is being further increased by the large and increasing exports of food-stuffs and other agricultural products from India to different parts of the world.

The remedies for the present unsatisfactory situation are (1) re-organisation of Indian agriculture on improved and scientific lines by the application of larger capital, and improved arts of production (including the use of machinery where necessary and possible).

(2) Arresting the decay of Indian handicrafts and cottage industries and wherever possible re-organising them on sound economic and social foundations.

(3) And also developing modern large-scale manufacturing and transport industries, etc., which by their increasing returns might check for the country as a whole the tendency to diminishing returns specially in agriculture.

The Law of Diminishing Return and its general effects.

What are the general effects of the Law of Diminishing Return on the production of wealth and its distribution? What are these effects in modern industrial civilisation and in earlier times?

Prof. Carver's interesting conclusions on these points are given below :—

In the creation of any product where there are various factors employed (viz. land, labour and capital) the amount of the product depends upon all three factors and if any one or two factors are varied in amount, the rest remaining the same, the product will vary but not in exact proportion to the variable factor—thus if the amount of land remains the same and the doses of labour and capital are increased, the product will increase but not in exact proportion to the increase of labour and capital; similarly by keeping the amount of labour and capital the same and increasing the amount of land the product will be increased but not in exact proportion to the increase in the land.

(I) *From the standpoint of the distribution of wealth, each and every phase of this universal law of diminishing return is important, for each and every one plays an important part in determining some share in distribution.* The operation of the law of diminishing return in connection with the theory of rent is explained in the Book on Distribution; and this law has also an important bearing in determining other shares in distribution. (It must be carefully noted that in every civilised country, the supply of land is relatively a fixed quantity, large fresh supplies generally being not available; but supplies of labour and capital are continually changing and can be increased by human efforts).

(II) *From the point of view of production of wealth, the law of diminishing return is of very great importance. (i) If industrial civilisation should remain relatively stationary while population increases, then supposing the supply of land remains fixed, the increased supply of labour will bring about smaller per capita production because of the law of diminishing return.*

The truth of this statement is proved by the low per capita production and the poverty of the overcrowded population of eastern countries where industrial civilisation is stationary and not progressive. (In countries where industrial civilisation is progressive, the operation of diminishing returns may be counteracted for a time by improvements in the arts of production, etc.).

(ii) With regard to uncivilised hunting tribes, the operation of this law is to be found in the fact that an increase in the number of hunters in the same area means lower per capita production, or in other words a diminished supply of food for each man.

Wars and migrations of early times were due in large measure to the action of this law.

(iii) *Even under the conditions of modern industrial civilisation, the operation of this law can be clearly seen in respect of any particular industry.* We find diminishing returns in hunting, in fishing, if the number of hunters and fishers increases in any given area of land and water. The law also holds true as regards pasture and also agriculture; and it also applies even to manufacturing which becomes less

productive per dose of capital and labour employed after the best situations have been occupied, and the existing plants have reached the maximum economy of large-scale production.

The operation of the law of diminishing return is not so clearly perceived as regards a complex population considering all its industries in a mass. It is frequently found that the development of one industry helps other industries—manufacturing for example makes hunting, fishing and agriculture more productive by providing better tools for these industries; and in this way the operation of diminishing returns as regards an industry (e.g. the agricultural industry) may be counteracted for some time. Again the increase of capital is an additional factor of immense importance in making the more highly developed industrial state more productive.

The Law of Diminishing Return in a very general form.

So in agriculture, in river fisheries, in mines, in manufactures, limitation in the supply of one agent in production, *viz.*, land is followed sooner or later by diminishing return to the investment of labour and capital. Here additional doses of labour and capital are applied to a *fixed quantity of land (natural agents).*

And we find this law of diminishing return is applicable (a) not only as regards natural agents, (b) but also as regards the limitation of supply of any other agent of production, viz., labour or capital.

Suppose the supply of capital is limited, and the quantity of instrumental capital is fixed and suppose more and more labour and materials are used with the same quantity of capital. After a time the point of diminishing return will be reached because owing to the limitation of the quantity of fixed capital, each labourer will not have sufficient tools and machinery to work with a suitable degree of efficiency. Similarly as regards labour. If an increase in the supply of labour cannot be produced and more and more capital and land are applied to a fixed quantity of labour, then it is found that after a certain point diminishing returns result.

So the law of diminishing return can be stated in a very general form.

The expansion of an industry (viz., agriculture, fisheries, mining, manufacture, etc.) provided that additional supplies of some agent of production (land or labour or capital) which is absolutely necessary to the work of production cannot be secured because of limitation of supply is always followed sooner or later by diminishing returns, other things being equal.

The law of diminishing return in its most general form results from the diminishing productivity due to insufficient supply of any one agent of production which is essential.

Professor Edwin Cannan on the Laws of Returns.

Professor Cannan, the doyen of the London School Economists, with his ample historical knowledge and characteristic vigour has useful discussions on the laws of returns in his *Wealth, A Review of Economic Theory and Theories of Production and Distribution*. Interesting extracts from *Wealth* are given below :—

The Law of Diminishing Returns.

The theory that growth of population had caused an *actual* diminution of returns in agriculture.

In England about 1814 it was believed that the returns to agriculture had recently diminished, and that this was a general rule throughout the history of civilization.

The theory that growth of population had made returns in agriculture less than they otherwise would have been, and this sufficiently to overbalance increase of returns in other industry.

Later expositions only asserted a tendency to diminution of returns, and admitted that the tendency might be defeated for a time by "improvements." This was thought enough to show that increase of population must be a bad thing, since it was assumed that in its absence "improvements" would increase produce per head. But we cannot tell what improvements would have been made if population had taken some other course from that from which it has taken. There is, too, no ground for assuming that if returns to agriculture have diminished, the returns to all kinds of industry, including agriculture, must have diminished, nor consequently for assuming that everything which tends to diminish returns in agriculture must tend to diminish them in all industries taken together.

The point of maximum return to all industries taken together.

In manufacture as in agriculture a large aggregate production has its advantages and its disadvantages. In each of them taken separately, and in both taken together, there is a point at which it can be said that the productiveness of labour is greater than it would be if the aggregate production were either greater or less than it is. From this it follows that there is at every given time a particular population which is neither too small nor too great. A departure from this point either upwards or downwards is unfavourable to the productiveness of labour.

The law of diminishing returns should be so expressed as to be universally true—*Synopsis*, pages xv, xvi. -

The Laws of Diminishing, Increasing and Constant Returns. A misuse of the term "law".

The course which the development of theory on this subject has taken has led to the use of a great deal of very unsatisfactory phraseology which ought to be discarded. Writers have said that "the law of

diminishing returns had not come into operation," when they only meant that returns had not begun to diminish, and they have spoken of the law "undergoing a temporary supersession" when they meant only that returns had left off diminishing for a time. They have talked of "commodities which obey the law of diminishing returns" when they meant commodities the supply of which could not at the moment be increased without a diminution of returns, and of "commodities which obey the law of increasing returns" when they meant commodities of which some increase of supply would be at the moment accompanied by increased returns. They have even imagined an intermediate class "obeying the law of constant returns." All these expressions involve misuse of the term "law." A scientific law should be true at all times and places, and should not be liable to "temporary supersessions" or failures to come into operation, nor capable of being suddenly replaced by a contrary law. No one says that the law of gravity had not come into operation in Newton's garden until the apple broke from its stalk, nor that the law would have undergone temporary supersession if Newton had caught the apple as it fell. Nor do we say that a falling balloon is "subject to the law of gravity," but a rising balloon is "subject to another law, that of rising bodies," while a balloon which remains at the same level is "subject to the law of constant height."

If we want to preserve the phrase "diminishing returns" we must take the point of maximum return as the starting-point, and say that returns diminish in either direction, all commodities or industries being always and everywhere subject to this "law of diminishing returns."

CHAPTER II.

LAND (NATURE).

Summary.

The Law of Diminishing Return.

The Law of Diminishing Return from natural agents is one of the most important laws of Economic Science. It belongs to the very foundations of the subject.

Briefly the law is this—the increase of product is (*in general*) less than in proportion to the increase of capital and labour invested in an industry (specially in agriculture).

Limitations relating to the Law.

The words "in general" imply certain limitations on this law. These limitations relate to (a) improvements in the arts of production, and (b) the fuller utilization of land which was at first imperfectly cultivated by insufficient labour and capital.

In all these cases, the Law of Diminishing Return is *temporarily* held in check, but *ultimately* the law will prevail.

The Law of Diminishing Return—the extent of its application.

The law operates in (1) agriculture, (2) river fisheries, (3) mines, and (4) in a much smaller degree in manufactures. The case of mines differs from that of agricultural land, because mines are exhaustible sources of wealth.

Questions.

1. State carefully the Law of Diminishing Return with all necessary limitations. (A. U. 1864, 1899, 1905).

State the Law of Diminishing Return. Illustrate from Indian conditions. (C. U. 1916).

2. State the Law of Diminishing Return in a form sufficiently full and guarded not to give an opening for the criticism to which it has been subjected by Carey and others. (A. U. 1904).

In a new country are the richest lands always cultivated first? Show the weakness of Carey's position and correct according to Marshall the inaccurate but substantially true statements of Ricardo. (C. U. 1909 II.)

3. Explain the following terms :—(a) A dose of capital and labour; marginal dose; marginal return; margin of cultivation.

(b) "As there is no absolute standard of fertility, so there is none of good cultivation." Explain and illustrate by Indian examples. (A. U. 1909).

4. Describe briefly the sphere within which the Law of Diminishing Return operates. Does it apply to mines? To manufactures?

5. Carefully indicate the relation of the Law of Diminishing Return to (a) the theory of population. (A. U. 1904; C. U. 1916).

(b) the doctrine of Rent (C. U. 1911).

CHAPTER III.

LABOUR.

Theories of Population.

Labour in the language of modern economics means *labour of men only* and it excludes labour by lower animals, e.g. horses, buffaloes, etc.; the term *labour* includes *physical exertions of men as well as mental exertions*.

Are we to regard all physical and mental exertions by men as labour? The answer is 'No'. Modern economists agree in regarding *labour as on the whole irksome exertion* or such as would not be undergone but for the stimulus of some ulterior aim (i.e. the desire to provide for present or future wants).

Labour.

Jevons defines labour as *any exertion of body or mind undergone by men partly or wholly with a view to some good other than the pleasure derived directly from the work*. Labour in the economic sense is done with a view to some other object except the pleasure which would spring frequently from physical or mental exertions. This "some other object" is generally money and it may be any other economic inducement.

So any exertion of body or mind undertaken *wholly* with a view to the pleasure arising from that exertion is not labour in the economic sense of that term. A man playing football for the pleasure of the thing only, or a man composing verses for his own private satisfaction is thus not labouring from the economic point of view.

Productive and Unproductive Labour.

(The object of all labour is to produce some effect apart from any pleasure which may arise from the exertion.) Now there has been a good deal of controversy about the expression "productive labour." 'Productive labour' was at first used in a more or less narrow and restricted sense, but the meaning of the expression has been gradually enlarged till productive labour

is now applied in a very broad sense to mean practically all kinds of labour.

(What we mean by 'productive labour' depends upon what we mean by 'production.' Modern economists (e.g. Taussig, Marshall, and others) hold that 'production' means production of utilities of any kind (whether the utility is embodied in any material object or not); and so they hold that any kind of labour which produces any kind of utility is productive labour. Only that labour is unproductive which fails to produce any utility, which is wasted, e.g. if a man employs labourers to make a canal, but if after some work has been done the project is abandoned then the labour already spent would be unproductive labour.)

(1) Taussig's view.

Prof. Taussig remarks "since the essence of production is that it leads to satisfactions or utilities, it follows that any labour or effort that yields utility is productive labour."

Agriculturists who produce food-stuffs and raw materials, manufacturers who produce different kinds of products which are wanted, they all produce utilities and so their labour is productive. The army and the navy, the police and the judges, they also produce utilities and therefore their labour is also productive. The musicians and the opera-dancers, they also produce utilities and are thus productive labourers, though the utilities they produce are rather luxuries than necessities.

Prof. Taussig even holds that labour engaged in producing quack medicines and harmful intoxicating liquors is productive labour in the sense that it adds to the sum of satisfactions as the purchasers want these things and are satisfied when they get them; he thus holds that the labour that produces any utility (satisfaction) must be regarded by economists as productive, even though the ultimate consequences (e.g., as regards quack medicines, injurious intoxicating liquors, etc.) be harmful.

Taussig excludes from the category of productive labourers, paupers, thieves, swindlers, ne'er-do-wells, who are parasites, who produce no utility; they contribute nothing; they simply try to get things away from others; and their labour is entirely unproductive.

(2) Marshall's view.

Professor Marshall also holds a similar view. He is of opinion that if we had to make a fresh start with the term productive, it would be best to regard *all labour as productive* except that labour which fails to promote the aim towards which it is directed and so produces no utility. *Marshall would thus like to use "productive labour" in the sense of labour which produces utilities of any kind.*

The domestic servant, according to Marshall, is not necessarily unproductive, though it is true that his energy might be utilised in a better way, with more advantage to the community in another occupation. *The baker* who provides bread for a family, and *the cook* who boils potatoes, they all produce utilities and so their labour is productive.

The historical development of ideas relating to the productiveness of labour.

The phrase "productive labour" was used at first in a narrow sense and the meaning of that expression has been gradually extended till it now includes practically all kinds of labour producing utility of any kind.

(i) *The physiocrats regarded agricultural labour (and also hunting, fishing and mining) as 'productive labour'* and they did not consider manufacturing or commerce as productive. The physiocrats held that agriculture, hunting, fishing, mining are the only industries in which nature works along with man and so creates a *net product*, and so these industries alone are productive.

(ii) The physiocratic idea about 'productive labour' was too narrow; and it was somewhat enlarged by *Adam Smith who included manufacture also as productive labour*. The agriculturists create utility, manufacturers do the same thing and hence it is quite clear that the word 'productive' should be extended to manufactures.

(iii) *The expression 'productive labour' was then extended to include transport industry and also commerce.* The men who transport coal or iron from the mine to the factories where they are wanted, they by the act of transport create an additional utility—the coal transported to the factory has a much greater utility than coal in the mine and the merchants also create utility by transferring things from places where they are less wanted to places where they are more wanted; therefore the term productive labour must be applied to the transport industry and commerce.

Many of the earlier writers on economics hold that only such labourers as produce material things are productive, all other labourers are unproductive.

Adam Smith remarks "in the same class of unproductive labourers must be ranked some both of the gravest and most important and some of the most frivolous professions: churchmen, lawyers, physicians, men of letters of all kinds; domestic servants, players, buffoons, musicians, opera singers, opera dancers." These men do not produce material things and they are regarded by Adam Smith as unproductive. Men engaged in many liberal professions, (e.g., lawyers, judges, the army and the navy of the nation), also domestic servants, also the men who engage in occupations which provide amusement for the people (e.g., actors, singers)—they are all regarded by early economists as unproductive labourers.

The modern idea as has been already explained is different. Production means the production of utilities whether in material things or in the form of the services of the doctor, the lawyer, etc. The lawyers, judges, even domestic servants, actors, singers—they all produce utilities and so they are all productive labourers, using the word productive in the broadest sense of the term.

The Supply of Labour.

The total supply of labour in any country depends upon

- (I) the quantity of labourers, i.e. the number of labourers ;
- (II) the efficiency of labour.

(a) The efficiency of labour depends upon health and strength, physical, mental and moral, of the labourers ; (b) and the efficiency of labour also depends upon the manner in which the labourers are organized. The characteristics, mental, physical and moral, upon which depends the efficiency of labourers and also the organization of labour which so much influences efficiency will be described at some length a little later on.

***The Growth of Population.**

Of the two ultimate agents of production, land (Nature) and labour (Man), *Man plays the active part in the work of*

* The subject of the growth of population has a very important bearing on the Theory of Production; and it has also a very important bearing on the Theory of Distribution and also socialism because it relates to the supply of labour. Many economic writers therefore discuss the theory of population in connection with Distribution.

production, and Nature plays the passive part. Man is the chief means in the production of wealth ; and also Man is the ultimate goal of the wealth that is produced because wealth is produced to satisfy the wants of man.

To appreciate properly the part played by man in the work of production we have to study the growth of population in numbers, strength and character, and how the production of wealth is affected by these things.

Theories of Population.

The study of the growth of population has engaged the minds of thinkers in civilized countries from very early times. *Theories of population change with changing political, economic and social conditions in a country—a large population is always favoured in times of war, for a country with a large population can easily raise and maintain a large army. And only when a country finds itself unable through poverty and other causes to support a growing population, we find a demand for restricting the numbers of the people.*

In ancient Greece and Rome, military necessity brought about a strong public opinion in favour of the growth of population which was to be, if necessary, encouraged by the state ; and indeed this ever-present military necessity favoured encouragement of population more or less in all ancient countries, eastern and western. In ancient India, during the time of the Vedas the Aryans had to fight hard against the aborigines to get a footing in the country ; and we find the Aryans made fervent prayers to their gods to be blessed with numerous children so that victory might come to them. The religious injunctions among Hindus and other ancient peoples for having children and specially male children seem to be largely due to this imperative military and political necessity. During the middle ages of Europe and in later days opinion on the subject of growth of numbers has changed from time to time—a rapid increase in the numbers of the people being strongly desired during and after wars but not so in other times on account of the increased economic pressure and diminishing standard of comfort resulting from an excessive growth of population.

Malthus.

The modern history of the Theory of Population practically begins with Thomas Malthus (1766-1834), an English clergyman who made important contributions to the development of economic science.*

At the end of the eighteenth century, in the year 1798 Malthus published the first edition of his *Essay on the Principle of Population*; and he was induced to do this because he believed that great and unconquerable difficulties lie in the way of the future improvement of society on account of the power of population to increase at a much faster rate than the power of the earth to produce food for man. Malthus was led to this conclusion largely by his personal observation of the evils of overpopulation in England and Ireland of his time.

The theory of Malthus as developed in the second edition of his "An Essay on the Principle of Population" may be thus summarised :—

†A Summary of the Malthusian Theory.

1. *(Population in a country tends to increase much faster than the food supply. [In the words of Malthus "Population*

* Malthus like Mill ate the salt of India. Mill was in the India Office, Malthus was the first Professor of History and Political Economy in the Haileybury College for the cadets of the East India Company.

His earnest plea for the restriction of population went against the current theological notions of his time, and roused a storm of ignorant and unreasoning opposition which has not as yet completely subsided. A good man himself, he never countenanced vice in any form.

It has been said that Malthus suggested Darwin. Their methods were indeed the same, but not their conclusions. (See Nicholson's *Principles*, Vol. I). Also "Just as Darwin shocked traditional theology regarding the origin, so Malthus offended it in respect of the continuance of the human species." (Nicholson).

†The Malthusian Theory as stated by Prof. Marshall.

The Malthusian theory can be summarised after Prof. Marshall in the following three propositions.

1. The Supply of Labour.

As regards the supply of labour in a country, Malthus proves that every people (of whom we have a trustworthy record) would have

when unchecked increases in geometrical progression and the food supply increases only in arithmetical progression, i.e. population will increase much faster than the food supply of the country) can be increased unless the forces which tend to increase the population are counteracted by other forces. Malthus expresses his law by the following figures which are intended to illustrate the *Geometrical Progression* of population, 1, 2, 4, 8, 16, 32, 64, 128, 256, etc., and *Arithmetical Progression* of production of food, 1, 2, 3, 4, 5, 6, 7, 8, 9, etc. This has been always so in the past history of man and will be so in the future.

2. *The tendency of the population to increase may be counteracted by two classes of checks*, (i) positive checks (e.g.*

increased in population rapidly and continually if the growth of the population had not been checked either by positive checks (e.g. infanticide, war, disease and scarcity of the necessities of life), or preventive checks (e.g. voluntary restraint).

2. The Demand for Labour.

As regards the demand for labour, Malthus implies that the amount of food that Nature returns to the labour of man in a country is Nature's effective demand for labour (population) in that country. (*Nature's demand for labour in a country = food supply of the country*).

He shows that up to his time a rapid increase in population (in a country where the population is already thick) has not led to a proportionate increase in food-supply; or in other words, a rapid increase in the population of the country has not led to a proportionate increase in Nature's effective demand for population.

(The supply of labour, if the growth of population is unchecked, thus tends to increase faster than Nature's demand for population).

3. The Conclusion.

Malthus draws the conclusion that what had happened in the past history of man is likely to happen in the future and that in the future as in the past, the growth of population would be checked by positive checks, if the growth of population is not checked by preventive checks; Therefore Malthus urges people to exercise the preventive checks, and to abstain from early marriage, etc., and thus to reduce the rate of the growth of population.

(Malthus urges the use of preventive checks because that would be attended with much less suffering than the operation of the positive checks. It is immensely better that people should exercise a certain self-restraint and thus cause fewer children to be born, than the population should increase so fast that it should have to be kept down by positive checks, starvation, disease and war).

* "All the immediate checks to population, which have been observed to prevail in the same and different countries, seem to be resolvable into moral restraint, vice and misery; and if our choice be confined to these

infanticide, disease, starvation, wars), which check the growth of population by killing people already born, checks which increase the number of deaths, (ii) preventive checks (e.g. late marriage and voluntary restraint of different kinds) which prevent people from being born, checks which reduce the number of births.

And Malthus concludes that people "should exercise" preventive checks, e.g. voluntary restraint, and should marry late and have few children and in that way should keep down the growth of population and thus prevent misery. If the growth of population is not checked by preventive checks (e.g. voluntary restraint), it would be checked by positive checks, by starvation, disease, war or some other cause of suffering.

* A Criticism and Examination of the Malthusian Theory.

Malthus wrote especially for his own time and he generalised perhaps unduly from the facts he himself was witnessing.

three, we cannot long hesitate in our decision respecting which it would be most eligible to encourage.

In the first edition of this essay I observed, that as from the laws of nature it appeared, that some check to population must exist, it was better that this check should arise from a foresight of the difficulties attending a family and the fear of dependent poverty, than from the actual presence of want and sickness.

The difficulty of moral restraint will perhaps be objected to this doctrine. To him who does not acknowledge the authority of the Christian religion, I have only to say that, after the most careful investigation, this virtue appears to be absolutely necessary, in order to avoid certain evils which would otherwise result from the general laws of nature.

To the Christian I would say that the scriptures most clearly and precisely point it out to us as our duty, to restrain our passion within the bounds of reason; and it is a palpable disobedience of this law to indulge our desires in such a manner as reason tells us will unavoidably end in misery" (Malthus—*An Essay on the Principle of Population*).

* Mr. Bertrand Russell in his *Principles of Social Reconstruction* remarks "Malthus's statement of the population question had been true enough up to the time when he wrote. It is still true of the barbarous and semi-civilised races and of the worst elements among civilised races. But it has become false as regards the more civilised half of the population in Western Europe and America. Among them, instinct no longer suffices to keep numbers even stationary."

What is regrettable at present is not the decline of the birth-rate in itself, but the fact that the decline is greatest in the best elements of the population." And as regards Western Europe and America he goes on to suggest that the expense of children should be a charge

His theory might have been largely true in his time and of his country ; certainly it is not true of all times and all countries.

For example, in his time there were no steamships and easy communications to bring cheap supplies of food from foreign countries to England. To maintain her population, England had to depend very largely upon her own home production of food ; and this English food supply was already subject to the Law of Diminishing Return. And so Malthus had good reason for believing that in England of his time increase of population would be faster than the increase of food supply. *Now the conditions are changed.* England with her large and growing wealth from manufacturing industries, etc., now exchanges part of her wealth for cheap food from foreign lands. So in England of present time, there is no danger of a shortage of food supply—as long as English industry and trade are efficient and prosperous.

In detail the following objections have been advanced against Malthus.

(1) *The objection that Malthus did not grasp the true nature of the Law of Diminishing Return.*

He did not clearly understand that the Law was elastic, and that the operation of Diminishing Return relating to food supply could be counteracted by (a) improvements in the arts of agriculture and better organization of labour ; (b) by increasing return in manufactures and by the importation of food.

And so he exaggerated the danger of a shortage in food supply.

(2) *The biological argument against Malthus.*

The biological argument asserts that Man becomes less prolific with advancing civilization. The fertility of the human race diminishes with its intellectual and moral development, and so there is no danger of over-population in future.

(This argument has been disputed, and it is of doubtful validity).

on the state. "If the sterilising of the best parts of the population is to be arrested, the first and most pressing necessity is the removal of the economic motives for limiting families. The expense of children ought to be borne wholly by the community."

(3) *The Socio-Economic argument against Malthus.*

Various social and economic reasons combine at the present day to diminish the rate of growth of population in Europe and America. The old-world pride in a large family of children has by this time almost died out specially in Western countries. Again to poor people, children of a tender age are no longer sources of gain, the profitable employment of such children being prohibited by Education and Factory Acts.

And then the standard of comfort is elastic and is rising and is reducing the rate of growth of population. The middle classes and even the masses of the people in many modern countries restrict the number of children in the family. A man finds it easier to maintain the standard of comfort of his own class with a small family than with a large one.

(Again it has been found in the United States and elsewhere, the wealthier a class is, the smaller is the size of the average family in it. *Growth of wealth diminishes the growth of population. This has been called the 'wealth check' on population).*

On the one hand, the growth of population is being checked by a rise in the standard of comfort among all classes in modern countries like Britain, France or U. S. A. ; on the other hand, wealth is increasing fast in these countries because of the increasing use of machinery and scientific inventions and the system of large-scale production.

*As a matter of fact, in the course of the last hundred years and more after the publication of Malthus's work, population in modern Great Britain, France, United States and other progressive countries has not increased faster than the food supply available for the population ; and population has certainly not increased in these cases faster than the growth of wealth.**

* In Malthus's time the question was whether population increased faster than food supply. With us, the question has resolved itself into this—whether population increases faster than wealth, than the productiveness of industry. "Under favourable conditions population may increase gradually and wealth rapidly. * * The problem of population as a whole is then, not of mere size, but of efficient production and equitable distribution. That is, it is a problem not of numbers alone but of wealth." (Seligman).

Rather in these countries, wealth has increased largely because of increasing use of machinery and the economies of large-scale production and wealth has increased faster than population.

Speaking of these rich and progressive countries, we may say that later experience shows that Malthus over-rated the tendency of the population to increase faster than the food-supply.

(4) As has been seen, Malthus's mathematical formulæ about the growth of population in geometrical progression and the increase of food supply in arithmetical progression are misleading ; no such exact mathematical ratios can be laid down really.

Malthus was a Cambridge Wrangler. This explains his fondness for mathematical formulæ. He attached great importance to his geometrical and arithmetical ratios, though some of his apologists have maintained the contrary. (Cannan—*Theories of Production and Distribution*, Ch. V.).

The Law of Diminishing Return and Population.

Whether Malthus himself based his theory of population consciously on the law of Diminishing Return has been disputed.

Subsequent economists have however defended the theory of Malthus by connecting it with that law—population increases faster than food supply, because the supply of food from the land is subject to the Law of Diminishing Return. The theory of population is thus made to lean on and is based on the Law of Diminishing Return. (If with the increase of population, there were increasing or even constant returns from land, there would be no shortage in food supply ; and so the Malthusian theory would fail).

The Law of Population and Socialism.

For this, refer to Book VI, Chapter II.

Elements of truth in the Malthusian Theory.

In spite of the criticisms, the elements of truth in the Malthusian theory must on no account be neglected.

(1) *In rich and progressive countries like Great Britain, Germany and the United States, population has increased*

though it has not increased faster, than wealth. *So the Malthusian theory does not at present apply, and at present there is no danger of over-population.* And the increase of population in these countries has been kept in check partly by positive checks (e.g. disease, war, etc.) and partly by preventive checks (e.g. late marriage, also deliberate restriction of births after marriage).

However with advancing civilization, the preventive checks have become more important as advocated by Malthus.

(2) *In poor countries like India,* China, etc., the population tends to increase faster than the food supply and the growth of population is kept in check by the severe action of positive checks like famine, disease, etc. The Malthusian theory applies.*

In view of the present low productivity (in agriculture, manufactures, etc.) of the people, the danger of over-population is already real in India ; and the population tends to increase faster than the food supply, faster than the wealth of the country—and population in India is kept from multiplying quickly only by the severe operation of positive checks like famine, chronic under-feeding, diseases like malaria, plague, cholera, etc.

India is an old country already thickly populated, and the production of food from the land is subject to Diminishing Return. Food supply increases slowly and with much effort. Irrigation within the country is not yet adequate, and there is not much importation of food because of the poverty of the people. In India there is no rapid growth of wealth from agriculture (because of the Law of Diminishing Return) and there is no rapid growth of wealth in other ways, as manufactures and commerce of the modern type are as yet imperfectly developed. On the other hand, a rapid increase of population is favoured by (i) the climate and also by social and religious customs favouring early marriage and making marriage practically compulsory in the case of Hindu females.

* The student may refer in this connection with reservations to Wattal's *The Population Problem in India*.

(ii) and the practical absence of preventive checks. The great majority of the Indian people have no idea of a Standard of Life. Even beggars marry and have families.

In India the preventive checks are largely absent and the positive checks (disease, famine, etc.) are consequently in great prominence. Any substantial shortage in the food supply through extensive failure of crops in any year will lead to famine and the death of thousands and even millions. And the influenza epidemic of 1918 alone was responsible for 6,000,000 deaths. In fact positive checks like famine, disease, etc., are at present so severe in their operation in India, that the Indian Census of 1921 shows a very small increase of population (only 1·2 per cent.) over the Census of 1911; and in Bengal, several districts are being rapidly depopulated and show an annual excess of deaths over births, this being due to the wide prevalence of malaria.

(Migration outside India for the Indian population is not at present practicable on any large scale because of the innate conservatism of the Indian people, their poverty and their lack of education and also because of strong colour-prejudice against Asiatics in British colonies and other political difficulties).

(3) As regards the future of the human race, it has been pointed out by some writers that the earth cannot provide for an unlimited number of people. In the remote future when all countries of the world will be thickly populated, sooner or later the operation of the Law of Diminishing Return will make wealth grow less rapidly, and then the danger in connection with the tendency of population to increase faster than wealth will manifest itself.

But this kind of speculation about the remote future is pure conjecture—it has no scientific value.

THE INCREASE OF POPULATION.

The growth in numbers of the people of a country depends on (i) **natural increase**, i.e. the excess of births over deaths and (ii) **on migration** from that country and also **immigration** into that country.

1. Natural Increase.

(A) Births and the Birth-rate.

The number of *births* varies largely according to climate and habits and customs relating to marriage.

(i) *The climate.*

Marriages are earlier in hot climates than in cold and temperate climates. They are earlier in India than in England. The earlier the age of marriage in a country, the higher will be the birth-rate; and the later the age of marriage, on an average, the smaller will be the number of births per marriage.

(ii) *Social and religious customs.*

The institution of marriage, and the growth of population are controlled largely by social and religious customs and habits. A rapid growth of population will result from the custom of polygamy; monastic institutions based upon celibacy will act as a check on the growth of population.

The age of marriage is influenced in different ways and degrees in different countries by these social and religious customs. Here in Bengal, religious custom makes the marriage of a Hindu girl practically compulsory while she is in her teens.

In certain stationary rural parts of Europe, social custom having the force of law prevents more than one son in each family from marrying, he is generally the eldest and in some places the youngest; if any other son wants to marry he has to leave the village and to seek for work elsewhere to prevent overcrowding in the village. Such a custom, of course, tends to raise the age of marriage of the other sons.

(iii) *The Standard of Comfort.*

Other things being equal (the climate, social and religious customs, etc., being the same), the average age of marriage for any class depends on the standard of comfort of that class and the ease or difficulty with which a young married couple will be able to maintain that standard of comfort.

In England, the income of a man belonging to the middle class generally is at its highest when he is forty or fifty years of age ; the income of the skilled artisan almost reaches its maximum by the time he is about twenty-one and the unskilled labourer begins to earn his maximum wages at about eighteen years of age—the result is that the average age of marriage is highest among the middle classes ; it is considerably lower among the skilled artisans and the age of marriage is even lower among the class of unskilled labourers.

In Bengal the age of marriage for males among the middle classes has been considerably raised within recent times because of the growing difficulty of maintaining a family according to the standard of comfort prevailing among the middle class.

(B) Deaths and the Death-rate.

The increase of population depends not only upon the birth-rate, it also depends in a very important degree upon the death-rate—*other things being equal, the lower the death-rate, the greater will be the increase of population.* In countries with a comparatively backward industrial and sanitary civilization (*e.g.* China, India) the birth-rate is high, so also is the death-rate. It will be found that rich countries (like Britain) in an advanced stage of industrial development have generally a low birth-rate but they have also a lower death-rate on account of up-to-date sanitary and medical arrangements. And so the natural increase of population in these rich countries has been generally uninterrupted. India has a comparatively high birth-rate, but it has a very much higher death-rate (because of famine, disease, etc.) than Britain—and so the percentage increase of population in India during the ten years (1911-1921) has been very low, only 1·2 per cent.—in fact much lower than in Britain.

II. Migration or Immigration.

It has been already pointed out that the two sources of an increase in population are (I) *Natural increase, i.e. the excess of births over deaths* ; (II) *Immigration.*

The rapid growth of population in the United States is due in a substantial measure to immigration into the United States from Europe. There is practically no immigration into India from foreign countries ; and in fact just now India wants more production and does not want more population which she is unable to support properly under present conditions. These outlets can be provided partly by migration to those British colonies and dependencies which have not a large white population and which are otherwise suitable ; in colonies with a considerable white population, colour prejudice and racial considerations impose obstacles which British statesmanship has up to the present been unable to surmount.

Decline in Birth-rate in the 19th century in Western Europe and the United States coupled with a nearly stationary Marriage-rate.

From the middle of the nineteenth century, there has been a decline in the birth-rate in rich countries with a progressive industrial civilization,—the birth-rate has diminished in England from 33 per 1000 in 1850 to 25 per 1000 in 1912, in France during the same period the birth-rate has fallen from 27 per 1000 to 19, and in Germany it has fallen from 38 to 30. *The preventive check has been in operation.* Malthus expected that the fall in the birth-rate was to be brought about by a fall in the marriage-rate. This fall in the birth-rate in the 19th century has come about with a marriage-rate practically stationary ; and the decline in the birth-rate is a consequence not of fewer marriages, but of fewer children per each marriage, the smaller number of children to each marriage being due to *deliberate prevention.*

This tendency to limit deliberately the number of children per marriage is found more or less among all classes in wealthy and industrially progressive countries ; and it exists in a stronger form among the richer classes than among the less well-to-do classes.

Evils from an excessive use of the preventive checks.

It has been seen that the tendency to restrict the number of children in each family is very pronounced among the wealthy

classes in Europe and the United States. And it is now maintained by many economists that this tendency has been carried to an extreme length, and the preventive check has been carried so far as to bring about positive evils to the community.

The evils that may result are chiefly the following :

- (I) *Degeneration of the population.*
- (II) *Depopulation involving the dangers of 'race-suicide.'*

I. Degeneration.

(i) *Lower economic efficiency in children of small families belonging to the upper classes.*

Comparatively well-to-do people marry late and so their children are often wanting in inherited vigour. They have few children ; and the children of such parents, being brought up with excessive care, and having ample inherited funds are generally timid and unenterprising and mostly fail to achieve any notable successes in the industrial field or elsewhere.

(ii) *The fact of fewer children in the prosperous families of the upper classes means a loss in the quality of the population.*

No doubt many men of genius are born in the working classes ; and with the present wide diffusion of education, a larger and larger proportion of the able and intelligent men of the nation is likely to come from these classes.

Still it can be fairly maintained that the more prosperous classes of population are those in which the percentage of men with high intellectual qualities is likely to be higher. So the present tendency among these upper classes to restrict excessively the number of children in each family is likely to diminish considerably the number of able and intelligent men in the nation and in this way the quality of the population will suffer.

II. Depopulation and Race Suicide.

The political and military dangers of a decreasing population are extremely serious—a decreasing population generally means decreasing economic, political and military strength of the

nation. From the political point of view an excessive use of the preventive checks by the mass of the people is a great national peril. In France this had led to a serious political position ; and the French people are attempting to stimulate the growth of population by offering various concessions to the parents of large families. At present a nation with a small and slowly-increasing population runs the grave risk of being swallowed up by a nation with a larger and more rapidly-growing population.

Conclusion.

The question of the right size of population for a country is not to be decided on economic grounds only. For a country will require a large population on military and political grounds if it has to raise a large army to defend itself against powerful and aggressive nations surrounding it.

Within the limits assigned by political and military considerations, from the economic standpoint the question of population in modern times is one of right adjustment of population to the economic resources of the country. In Malthus's time the economic question was the adjustment of population to food supply, and whether population increased faster than the food supply in the country ; in modern times (specially in rich countries like England which does not depend only on food produced within the country, but with her increasing wealth imports large quantities of food from foreign countries) the adjustment of population is not to the food supply produced within the country, the adjustment of population is to total wealth production (in agriculture, manufactures, mining, etc.) in the country and distribution conditions—the more efficient is the production of wealth and the more equitable is distribution in a country, the larger the population that a country is able to support under healthy economic conditions.

For example, in India at present the population is not excessive considering the area of the country (there are parts of Europe more thickly populated considering the area and yet they are prosperous), but the population of India is excessive

as compared with the total production of wealth (which is poor) and also the unsatisfactory distribution conditions ; and the right remedy will be greater production of wealth in agriculture, mining, manufactures, etc., and better distribution. (In fact the census of 1921 shows that the population of India has practically not increased since the census of 1911). *So in India, the right solution is not a smaller population but a larger production and better distribution.* Again in Europe just after the last great war, which carried off millions of men, there was a great deal of talk about encouraging the growth of population by changes relating to marriage, divorce, motherhood.

As regards preventive checks relating to the growth of population, Malthus's 'moral restraint' is now being largely supplemented by artificial birth control among all classes more or less in Europe and America ; but this birth control is perhaps excessive among the upper classes of the population and rather deficient among the poorest classes.

Also some sort of state control is likely in the near future for checking the propagation of the unfit who are physically or mentally defective and who suffer from serious and painful diseases which will be transmitted to any children born to them, or are seriously deficient in intellect and sense of moral responsibility or have a hereditary criminal taint—this is likely on economic and also on social and political grounds.

Is an increasing population always beneficial to a country?
(C. U. 1932).

Certainly not.

The question has been abundantly considered. We repeat the argument.

It has been already suggested that an increasing population is sometimes beneficial to a country and that under different economic conditions it is sometimes just the opposite of beneficial. In conceivable circumstances, an increase of population may amount to a calamity.

When in a country, an increasing population is found with efficient production of wealth and equitable distribution so that wealth increases more than in proportion to increase of population, the country becomes more and more prosperous. The standard of living for the people improves. This was the condition of the rich and progressive countries

like Great Britain, Germany and the United States in the early years of the twentieth century. This will be their condition again if the temporary disturbances of the world economic depression be surmounted by adequate national and international co-operation.

An increasing population is not a benefit but a source of danger to the poorer and economically backward countries like India and China—so long they are not able to introduce efficient production of wealth in agriculture, mining, manufacture and trade and equitable distribution of the national income. With population increasing but wealth sometimes not increasing even in proportion, there is grave danger of famine and insufficiency of necessities for the people and of a lowered standard of living. When India and China will adopt more efficient methods of production and a fairer distribution, increasing population within the proper limits will bring no danger—indeed by making possible better organization and the economies of organization, may become a real benefit under certain circumstances.

But the statistical indications are that in the rich and progressive countries in Europe and America, population will not increase much due to widespread and increasing use of birth control. Such methods are likely to spread also in course of time to other parts of the world.

Overcrowding of population is inevitable. There is adequate employment.
Is it possible to abolish or mitigate poverty by checking population? (C. U. 1931).

Poverty has many causes. Over-population is not the only or ultimate cause of poverty in a country.

The communist finds the cause of poverty in private property. The socialist finds it in private ownership of land and capital, the agents of production. Co-operators attribute poverty chiefly to competition. Without accepting in full any of these views it may be maintained that *the causes of poverty in a country are to be found not simply in over-population but largely in inefficient production and unfair distribution of the national income.* In fact, what is regarded as an excessive growth of population in a country, backward in production of wealth and proper distribution, will be no longer regarded as over-population when the country has progressed in production and distribution. Whether population is or is not in excess in a country is always relative to production and distribution. So the remedies in connection with the removal and mitigation of poverty are to be sought not only in checks upon excessive growth of population but largely in measures which will promote national production of wealth and an equitable sharing of the national income. Education—general and technical, the spirit of invention, business enterprise and ambition, the growth of capital, banking and transport development, just national ideals as regards economic and political co-operation between the classes, free political and social institutions will solve the problem of poverty.

***The Population Problem of the World, practically solved (specially as regards the advanced countries).**

To refer broadly to the world population problem to-day. As already suggested some sort of state control for checking the multiplication of the unfit is likely, though it is developing rather slowly. But voluntary birth control among the different classes of the population is a powerful and rapidly increasing force in Europe and America and is extending to other parts of the world. This is bound to check seriously the growth of population in the near future. The application of modern science, invention and methods of organization to agriculture, manufacturing and other industries is greatly increasing productive efficiency. Even the great world economic depression to-day is to a great extent a crisis of plenty, not of scarcity. With better adjustment of production to consumption, a more satisfactory distribution of wealth and better monetary arrangements (all these things realized through adequate national and international co-operation), the world is not likely to have any

* "I think that the biggest change made in economic theory during the last hundred years is to be found in the treatment of the subject of Population....."

That theory, not as now taught in a form which makes it innocuous, but as taught in the early years of the nineteenth century, purported to show that the natural limitation of fertile and well-situated land must necessarily mean that the more numerous the people, the more difficult it must be for them to feed themselves.....

The economic history of the hundred years has tended to bring about a very complete reversal of economists' view of this matter.

The hundred years began with developments which threw great discredit on the fundamental assumption of the old school that the extension of human occupation of land necessarily meant that less fertile and less well-situated land must be occupied as numbers grew..... In the later part of the hundred years scientific discovery in various directions has led to a complete change of emphasis in regard to the importance of what the old economists used to call "improvements."..... Modern science has changed our outlook. We set no bounds to the possibilities of improvement. We expect to make unwholesome areas healthy, and to modify vegetable as well as animal products so that they will better serve our needs..... We smile now at the suggestion made in 1898 from the Presidential chair of the Association, that it would soon become very difficult to increase much further the production of wheat.

Thus, even if we still expected population to increase very rapidly, we should not believe, as J. S. Mill did, that it "everywhere treads close on the heels of agricultural improvement, and effaces its effects as fast as they are produced" (*Principles*, Bk. IV, Ch. iii § 5). But in fact,

fears in the immediate (possibly also in the remote future) as regards over-population, and insufficiency of food (or other forms of wealth).

A Note on

The Optimum or best possible Population. Some suggestions.

(There has been a good deal of discussion in recent years about the optimum or best possible population for a country. Prof. Cannan and Prof. Carr-Saunders have taken leading parts in these discussions. The idea of the optimum or best possible population for a country has been developed in relation to purely economic conditions—the optimum population (the desirable size and density of population for a country) is that

Cotter Morison's cry, made only a generation ago, that all would be well if only we could stop for a few years "the devastating torrent of babies" would seem grotesque to-day, for we do not now expect rapid increase of population to continue much longer, even if it becomes progressively easier to obtain subsistence.

Though there were eminent dissentients only a few years ago, statisticians are now agreed that in the absence of some great and unexpected change, the increase of population in England and Wales will come to an end at a very early date.....

The same change is now observable in some degree in other Western European countries and our own oversea offshoots. The cause of it—birth control—will doubtless in time affect the rest of the world, so that while we may expect considerable increase—even an increase much more rapid than at present, owing to decrease of huge infant mortality—to take place among the more backward peoples for another half-century at least, there is no reason whatever for expecting the population of the world to "tread close on the heels of subsistence" in the future, even if it may be correctly regarded as having done so in the past.

This change in our expectations involves many changes of emphasis, both in the theory of production and in that of distribution.

Two of them are perfectly obvious. First, the need, which J. S. Mill and most of his contemporaries and immediate predecessors felt so strongly, for insisting on the due restriction of population, has completely disappeared in the Western countries. Economists do not now require to talk as if the first duty of men and women was to refrain from propagating their race. Secondly, the need for insisting on the desirability of saving has become less pressing. A rapidly increasing population requires a rapidly increasing number of tools, machines, ships, houses, and other articles of material equipment in order merely to maintain without improving its economic condition, while at the same time the maintenance of a large proportion of children renders it more difficult to make the required additions. To a stationary population saving will still be desirable for the improvement of conditions, but it need no longer be insisted on as necessary for the mere maintenance of the existing standard.

But there are other changes of equal importance which are more likely to be overlooked.....—Cannan, *The Changed Outlook in regard to Population, 1831-1931*, in the *Economic Journal*, December, 1931.

population which secures the highest economic productivity per head of the population.)

Definitions of the Optimum Population.

1. *Prof. Cannan's Definition :

"It has been suggested that we may say that at any given time, or, what comes to the same thing, given any particular conditions or other things being equal, there is what may be called a point of maximum return attained when the population is so exactly fitted to the circumstances that returns (or productiveness of labour) would be less ("diminished") if it (the population) were either less or more than it is. This population has been christened the "*optimum population*"—Cannan, *A Review of Economic Theory*, 1929, page 81.

2. Prof. Carr-Saunders's Definition :

"In any country under any given conditions there is an '*optimum*' density of population which, if attained and not exceeded, will obtain the largest income per head that is within reach : a density, that is, which is the most desirable having in view the purely material idea of the average income of the inhabitants"—Carr-Saunders, *Population*, 1925, page 31.

The Optimum or best possible Population considered:

Prof. Cannan notes (1) that the point of maximum return does not remain permanently fixed, and (2) that we have to aim not at the best possible population at any particular moment but at the best possible population at all the moments taken together.

"Great caution must be exercised in applying the idea of a point of maximum return to the question what is the most desirable population. In the first place, it is very important not to fall into the error of supposing that the point of maximum return remains permanently fixed, either for particular industries or for industry taken as a whole. The position of the point is perpetually being altered by the progress of knowledge and other changes..... Hence it is quite possible that the world was over-populated in some past age when there was not a tithe of the present number of people on the globe, and that all the same it is not over-populated now. In the meantime the point of maximum return may have been shifted.

Secondly, we must remember that population is not so agile in its movements as to be able to follow every shifting of the point of maximum return immediately.....

* "I am myself responsible for adopting the idea of a point of maximum return in *Elementary Political Economy*, 1888, and the first edition of *Wealth*, 1914. In the 1928 edition of *Wealth* considerations mentioned in the next section are introduced. Professor Carr-Saunders is, I think, responsible for the term "*optimum density of population*" (*Population Problem*, 1922, p. 200)"—Cannan, *A Review of Economic Theory*, 1929, page 81.

The population of any moment is dependent for its magnitude on the population of the past, and will in its turn affect the population of the future.....

So what we have to look for is not the best population at any particular moment without reference to what has gone before and what is to follow after, but the best at all the moments taken together. In other words, we have to treat the idea or optimum in regard to population as being the right movement (*i.e.* increase or decrease) of population rather than define it in reference to one particular point of time. The right movement is that which will give the largest returns to industry in the long run, the interests of the people of all the generations being taken into the account"—Cannan, *Wealth*, 1928, pages 59-61.

In *A Review of Economic Theory*, 1929, Prof. Cannan has given his views as to how far this optimum population was realized by countries in the past, and how far it is likely to be realized in the future :

"While we may look back on the past with some complacency, we may be troubled by doubts with regard to the future.

It is true that the introduction and popularisation of modern methods of preventing conceptions make it much more unreasonable than it was to fear that the population of the whole world will increase too rapidly—faster than the optimum rate.....

It is true also that there is not much reason to fear the extinction or even the reduction of the whole human race in consequence of the adoption of the new method of control.....

The real danger seems now to be not that the total of population will be much too great or much too small, but that the growth of the more capable and efficient sections may be so checked relatively to that of the less capable and efficient by the new method of control that the effect on the total productivity may be bad.

* * * * *

While we cannot say that we could not have been bred better than we have been, we can, like Homer's Greeks, boast that we are much better than our remote ancestors,—

* * * * *

so that although it may be true that we might have been bred better, it is also true that we might have been bred much worse than we are. This rather suggests that we should not attempt to turn things quite topsy-turvy on the chance of making an improvement, but content ourselves with small changes, such as a further hampering of propagation by persons with undoubted hereditary defects or diseases"—Cannan, *A Review of Economic Theory*, 1929, pages 88-92.

Prof. Carr-Saunders seems to think that among pre-historic races, also among existing primitive races, "the checks which are set upon multiplication probably result in an approximation of the density of population to the optimum number."—*Population*, 1925, page 36. War, disease, exposure and other causes of death did of course cut off a certain

number in every generation before maturity. But elimination from these causes was not large. Further, about the same number would die every year from these causes. At the same time fertility was low. Although every one married as soon as marriage was physically possible, women bore many fewer children than they might have borne. This low fertility was due to one or more of the following customs—prolonged abstinence from intercourse between married people, abortion and infanticide." Prof Carr-Saunders is inclined to deny that starvation played as large a part as Malthus supposed in checking the growth of population; he seems to be of opinion that population was kept down by prudential motives leading to practices which prevented conception or destroyed the infants before or after their birth, or killed the children at a somewhat later stage when it became more obviously inconvenient to support them. Prof. Cannan's own suggestion is that the required explanation of the keeping down of population in early times is to be found in the high infant mortality among early peoples.

As regards the problem of population in England to-day and in the near future, Prof. Carr-Saunders's observations are to the following effect:—

"It would appear that the huge increase of population in this country during the last century did not result in any serious degree of over-population, if indeed there was over-population at all. Looking to the future we find the tide so set as to lead us to anticipate within a few decades a population stationary at a density not greatly in excess of the existing density. At the same time there is every reason to expect that scientific progress will render labour increasingly productive. The outlook is therefore not unhopeful..... While it may be that between 1900 and the present day certain facts suggest over-population, there may be other explanations. And when we enlarge our view and take into consideration the last century and the probable course of events during the next fifty years, then it would seem that, even if the position is now and has been for some time not altogether favourable, it is only a temporary depression"—*Population*, page 54.

Some suggestions:

(The idea of optimum population in relation to purely economic conditions has substantial economic importance. From the economic standpoint it emphasizes that the problem of population for a country is not one of numbers alone, but rather one of numbers in relation to productive efficiency—that is the best possible population for a country which makes possible the maximum income per head of the population taking its economic resources into account, an increase of population or decrease of population reducing the income per head of the population.)

But it must be pointed out that Prof. Cannan's idea that we have to aim at not the best population at any particular moment but the best at all the moments taken together ("the interest of the people of all the generations being taken into the account") is something rather far-fetched and not likely to be of great practical use in real life. "All

the generations being taken into the account"—this is rather difficult, rather impracticable.

Also nations so far as they encourage increase or decrease of population through political and social institutions and opinion have been guided in the past and will be guided in the future not only by economic considerations of productive efficiency, but also by military and political considerations.

CHAPTER III.

LABOUR.

Summary.

1. Labour. Productive Labour. .

In Economics, labour is the labour of man. And the term 'labour' refers to any exertion (physical or mental) performed with a view to money or some other economic inducement.

Modern economists regard all labour that produces any utility as productive labour. The labour of the agriculturists and the manufacturers is productive labour; so also the labour of the judge, the policeman, the soldier, the physician and the actor—for they also produce utilities.

2. Theories of Population. Malthus's Theory.

Theories of Population (like most human speculations) have generally close relations with contemporary facts.

Malthus's theory is a most important contribution to the subject: and in fact the modern history of the theory of population begins with it.

The burden of the Malthusian Theory is this—(mankind is constantly threatened by the danger of over-population. According to Malthus, (1) Population in a country tends to increase faster than food supply. (2) The tendency of population to increase may be counteracted only by positive or by preventive checks. (3) The positive checks mean great misery and suffering for the masses; so men should exercise the preventive checks (e.g. voluntary restraint) and thus save mankind from grave and serious evils.

Objections against Malthus.

His theory is largely true relatively to his own time and in his own country: certainly it is not true of all times and all countries.

The principal objections against Malthus are (i) the elasticity of the Law of Diminishing Return, and (ii) the Socio-Economic argument and the rise of the Standard of Comfort.)

The Law of Diminishing Return and Population.

The relation is this—population tends to increase faster than food supply because population grows fast while the supply of food from land is subject to the Law of Diminishing Return.

Some economists have defended the theory of Malthus by basing it on the Law of Diminishing Return.

The Truth in the Malthusian Theory.

The theory of Malthus does not apply at present to rich and progressive countries like England, France or the United States; but it applies to the England of Malthus's time, to poor countries like India and China at the present day.

3. The Increase of Population.

The growth of population depends upon

(1) *Natural Increase* which depends upon—

(A) The birth-rate as determined by (a) the climate, (b) social and religious customs relating to marriages, and (c) the Standard of Comfort.

(B) The death-rate as determined by the climate, general social conditions, medical and sanitary arrangements.

(2) *Immigration* which is an important factor as regards the growth of population in new countries like the United States.

An excessive growth of population brings serious evils, but an excessive limitation of population is also not desirable—this may lead to degeneration, also depopulation and 'race suicide.'

QUESTIONS.

1. What is Labour? Explain the terms 'productive labour' and 'unproductive labour.' How would you class the work of domestic servants? Shopkeepers? Circus performers? Actors? Musicians? Churchmen? Lawyers? Physicians?

'Nearly all labour is in some sense productive (Marshall)—Explain and discuss.

2. Explain and examine the Malthusian doctrine of population. (C. U. 1910, 1912).

3. Give the substance of the conclusions reached by Malthus in his "Essay on the Principle of Population." To what extent are those conclusions applicable to modern India?

Do modern tendencies give us any reason for modifying these conclusions? (A. U. 1915).

What is the law of population according to Malthus? To what extent is it applicable to modern conditions in India? (C. U. 1919).

"The problem of population is not one of mere size, but of efficient production and equitable distribution." Discuss. (C. U. 1923).

4. What is the bearing of the Law of Diminishing Return on the theory of population? Illustrate from Indian conditions. (C. U. 1916).

CHAPTER IV.

LABOUR.

Efficiency of Labour.

The industrial efficiency of labourers is determined by their qualities and capacity, physical, mental and moral.

1. The productive efficiency of the individual labourer due to his physical, mental and moral health and strength is dependent upon the following causes:—

(1) The climate.

The climate of a country always exercises considerable influence upon the efficiency of labour in the work of production of wealth. Very hot and very cold climates are unfavourable to hard work for long hours; a temperate climate is more conducive to efficiency of production.

At least this is the opinion of almost all European writers* on this subject.

*Buckle and to a smaller extent Bagehot among English writers hold such opinions.

Marshall in his *Industry and Trade* maintains a somewhat similar view—"Up to the present time a tropical climate has been fatal to the best energies of races, however vigorous. It has not indeed extinguished either the subtlety of their thinkers or the physical strength which the workers can exert for short periods; but it has been hostile to the power of undergoing severe continuous strain of mind and body."

Perhaps they tend to exaggerate in some degree the unfavourable influence exerted by tropical climates upon strenuous physical and mental work.

Again the climate of a country determines the necessities of life (e.g. the kind of food, clothing, house-room required) for the labourer and in that way also influences his efficiency.

(2) Qualities of race.

For example, English economists maintain that the English labourer has certain racial qualities (physical, intellectual and moral) which make him more efficient than the Indian labourer or the average labourer of many other races. [There may be some truth in this idea, but it is often apt to be greatly exaggerated. Superior efficiency ascribed to race may be largely due to better food or other favourable conditions.]

(3) The necessities of life and labour—food, clothing, house-room.

In every climate, the efficiency of the labourer depends upon his getting good food in sufficient quantity, adequate amount of suitable clothing and ample house-room under proper sanitary conditions. If the labourers of a country are underfed, if their clothing is insufficient to protect them against the rigours of the climate, if they live in insanitary, unventilated houses, then the health of these labourers will be greatly injured; and the efficiency of the labourers of that country will be largely diminished.

These causes of the inefficiency of labour are unfortunately very much present in India; and perhaps the labourers of the United States are those who suffer least from the operation of these causes.

(4) The intelligence of the labourer, his judgment, imagination, etc.—intellectual qualities.

Other things being equal, the more intelligent* the labourer

* In the words of Walker, "the intelligent labourer is more useful than the unintelligent labourer (a) because he requires a far shorter apprenticeship (he can learn his trade in a half, a third or a quarter the time which the other requires); (b) because he can do his work with little or no superintendence; (c) because he is less wasteful of materials; (d) because he readily learns to use machinery however delicate and intricate."

the greater will be his efficiency in production. The greater the clearness of his mind, the stronger his memory and his power of rapid and close thinking, the better will he be as a producer.

The development of intelligence and judgment among the labouring classes depends largely upon education; great progress has been made in Europe and America as regards the education of the masses of the people and this has very considerably increased the efficiency of labourers.

The comparative inefficiency of Indian labourers is due in no small measure to their want of education; education is necessary in India not only for the political and social benefits that it is sure to confer but also from the point of view of economic efficiency.

Imagination is a highly important quality because it is imagination that has produced the world's great industrial inventions and thus has enormously increased the production of wealth.

(5) *The qualities of will, e.g. honesty, energy, perseverance, etc.—moral qualities.*

These also greatly influence an individual's capacity as a producer.

(6) Hopefulness, freedom and change increase the vigour of labour, while slavery, serfdom and other forms of civil and political oppression lead to inefficiency in production. Freedom and hope increase man's willingness and also his power to work.

Changes of work and scenes develop new ideas and in many was stimulate productive energy.

(7) It is also to be noted that the efficiency of labour depends greatly upon the nearness and directness of the reward. The nearer and more direct the reward, the greater will be the degree in which the labourers will exercise their physical and intellectual powers in the production of wealth. This is the reason why slave labour is less efficient than free labour; and the labour of a free man working for wages on another's account is less efficient than the labour of a man working on his own account.*

* In this connection Walker (*Political Economy*) quotes two acute remarks of Arthur Young relating to the efficiency of production when a man is working not for wages but for himself.

Just laws and good social institutions will increase the efficiency of labour ; bad laws and unsound social institutions will do the contrary. If the laws and social institutions of a country are of such a character that the labourers have little or no incentive for work then naturally there would be inefficiency.

II. *The efficiency of labour also depends upon the proper organization of labour*—upon division of labour and its combination, a suitable proportion and adjustment between labour, capital and machinery and good business management.

Industrial Training—General and Technical Education.

The efficiency of labour is greater or less according to the quality of the industrial training the labourers have received.

Technical training is an important element in industrial efficiency. Intelligent, honest and energetic workers will all be better workers, the better their technical education.

General Education is necessary for the general development of the moral and intellectual qualities of the people, necessary for their social, economic and political development ; and **Technical Education** is necessary for the development of qualities appropriate to industries and also for special training in special industries.

General Education.

The immense advantages of a thorough system of general education are now recognized by all. Conspicuous examples are to be found in the United States and in Germany. The war has awakened England to a lively sense of educational possibilities ; and extensive educational programmes and reforms are now in the making. In India, even a system of general elementary education for the people is not yet established,—in this India falls far short of the countries of Europe and America and even of Japan.

“Give a man secure possession of a bleak rock and he will turn it into a garden.”

“The magic of property turns sand into gold.”

(1) First of all, it is to be borne in mind that a good system of education improves the quality of the people. It enlarges their mental and moral outlook, it gives them higher standards of life and conduct, it tends to make them more intelligent, more trustworthy, and also better and happier as men ; it makes them fit for higher forms of economic, political and social life.

This is an advantage the importance of which cannot be over-estimated ; this is an advantage which is not less important than all the industrial benefits of a good educational system.

(2) Education improves the economic efficiency of the workers.

(a) Education makes the workman more intelligent, more resourceful and more reliable and generally more efficient as regards his work.

(b) Education enables workmen in the lower grades to qualify themselves for work in the higher grades as foremen, managers, employers ; and it also stimulates them to invention as regards machinery, processes and so on.

(3) A substantial proportion of the men of genius of the country is born among the mass of the people. An adequate educational system will make it possible for the boys of genius belonging to poor families to acquire a thorough education at the expense of the state and it will be of immense value to the industrial efficiency of the nation. Education is thus a national investment. "The economic value of one great industrial genius is sufficient to cover the expenses of a whole town ; for one new idea such as Bessemer's chief invention adds as much to England's productive power as the labour of a hundred thousand men." (Marshall).

Technical Education.

Technical education is education directed to an end, and a particular end. It is education for a special industry or trade.

Technical education, how far it should be theoretical and how far practical—this is a question of the utmost importance and is always engaging the attention of educational experts.

Education should be adapted to the different grades of workers in an industry.

Technical education of the higher kind for the men who are to do superior kinds of work in the higher grades of any industry—technical education for these men is thus to include (a) *general scientific education for the development of mental faculties*, (b) and also *special scientific training for the particular purposes of that special industry* and it should include also *practical working in the workshop*. For men in the lower ranks of industry, practical training in the particular industry is wanted, and less of general scientific education and of special scientific training is required.

As regards technical education among modern nations, *England* perhaps excels in the practical part and *Germany's* superiority lies on the scientific side. In the *United States* is to be found a brilliant combination of the practical instincts of the English people and the scientific spirit of Germany.

Education in India from the economic standpoint.

The position of India at present is very unfortunate in this respect. **(A) Elementary education** (*so very necessary and indispensable for industrial and political progress, and for improving the quality of the people*) is free and compulsory for all children in all modern progressive countries, in Britain, Germany, France, United States of America, even in Japan—in India, *free and compulsory elementary education has not been introduced* by the British Government on the ground that it has not sufficient funds for the purpose (though the British Government spends half its Indian revenue on the army in peace time, takes about 20 millions sterling more annually for its Home Charges and has given large increments of salaries and allowances—the Lee concessions—to the higher services consisting largely of Britishers and not Indians).

(B) Technical Education for Indians in India and abroad.

Then to consider the subject of technical education.

The system of education introduced at first in India by the British Government was chiefly intended to supply a sufficient number of clerks and other subordinate officers for the British

occupation—and it created a disproportionate number of persons possessing a purely literary education, and it did at first nothing for the technical education of the Indian people. Later on the Government of India in response to public demand made slight efforts and Lord Curzon in 1901 summoned an Educational Conference and the Indian Industrial Commission in 1918 made certain recommendations. The practical results so far are very small.

Science (specially Chemistry) study and research are making some progress in colleges in Bengal and elsewhere.

Agriculture is India's chief industry employing the great majority of the Indian population, but the total Government expenditure on agricultural education in schools and agricultural colleges is very small compared with the vast magnitude of the problem ; *as for the other industries*, large-scale manufacturing and mining etc., India has got very few technological schools and colleges and some of them are not satisfactory in any way. And the facilities for workshop training in India are very limited ; there are not many workshops of the requisite standard and as they are generally owned by European firms, Indians often experience great and in some cases insuperable difficulties in entering them.

A very great expansion in the number of technical schools and colleges for agriculture and for large-scale industries and a substantial improvement in their quality (by government and private effort) are urgently needed for Indian industrial development ; and adequate facilities for Indians as regards workshop training in European-owned workshops in India can be secured by making this a condition for eligibility for government contracts. (Technical education in the handicrafts and cottage industries is supplied at present and has been supplied for generations by the caste organization* and *karkhanas* ; improvements here are necessary and should be undertaken with due care).

* "The caste system viewed in the light of a trade guild is a great lever for industrial improvement in this country, and any system of technical education that may be introduced in the country should fully utilise the existing system"—N. G. Mukherjee.

In India as elsewhere, it is desirable that technical education for the required industries should be provided as far as possible within the country by local experts and by imported European and American experts and teachers of the highest class (real experts of experience imported on high pay and not raw graduates). So far as the required facilities for technical education cannot be provided in India now and in the near future, India must send students for technical education to foreign countries—India must send some of her best students (not the mediocre or indifferent as is too often done at present), and preferably after some previous knowledge of the industry and local conditions in India, and she must send different batches of students to different countries (and not merely to England) to study particular industries for which each of these countries is specially noted ; and the Indian government will have to induce foreign manufacturers to give Indian students practical workshop training (foreign manufacturers are generally very unwilling to give this highly important and indispensable workshop training because of trade jealousy) by offering government contracts only to those firms which will provide such training.

Indian students going to foreign countries for technical education must choose first (1) industrial (*e.g.* sugar manufacture, cotton and woollen manufactures, iron and steel industries, chemical and pharmaceutical industries, coal and oil mining, railways, the manufacture of paper, etc.) which already exist in India with abundant raw materials and large consuming markets and which can be quickly expanded—and in such industries the demand for first-class experts with the best foreign training exists and will quickly expand in future.

(2) and then industries which though not yet started can be started in India because of favourable local conditions relating to raw materials, markets, labour, etc.

Industries already started should have preference over industries not yet started ; and industries with abundant supplies of raw materials and large consuming markets within the country should have preference over other industries.

In India as in other countries, as soon as possible the educational minimum for the people in general should include.

free elementary education for all, also ample facilities for technical education of different grades to suit different kinds of ability and inclinations. And it should include the education of all in the rights and duties of citizenship and in the principles and methods of co-operation—such education in citizenship and co-operation of the mass of the people (from childhood and continuing up to the period of youth and manhood) is of the very highest value in securing political stability and political progress and it is of equal value in securing economic stability and economic development of the nation. For this education in citizenship and co-operation will reduce the economic and political conflicts between labour and capital and will greatly extend the sphere of co-operative production and consumption, etc. This education in co-operation is not only sadly neglected in India (except so far as it is based on Hindu joint family and caste), it is also deplorably neglected in Europe and America with very unfortunate economic and political consequences.

The political importance of education should receive immensely more attention than is the case at present in the modern world—the ancient Greeks understood this somewhat better, and Aristotle* very rightly put great emphasis upon it.

*No one will doubt that the legislator should direct his attention above all to the education of youth or that the neglect of education does harm to states. The citizen should be moulded to suit the form of government under which he lives.....education should be public and not private.

.....In this particular the Lacedæmonians are to be praised, for they take the greatest pains about their children and make education the business of the state. (Aristotle—*Politics*, Book viii, chapter 1).

CHAPTER V.

LABOUR.

Summary.

The efficiency of labourers in a country is dependent upon—

(1) The efficiency of the individual labourer as determined by (a) climate and other natural conditions; (b) race qualities; (c) the necessities of life and labour; (d) the intellectual qualities of the labourer; (e) his moral qualities; (f) and the nearness and directness of the reward.

(2) The proper organization of labour—division and combination of labour and a satisfactory adjustment and proportion between labour, capital and machinery, and also capable business management.

General and also Technical Education are of very great importance in connection with the industrial training of the labour power of a nation. But the greatest of all benefits of education is that it improves the quality of the people—it generally makes them better men and women and capable of higher forms of life and happiness.

QUESTIONS.

1. On what does the efficiency of labour chiefly depend? (A. U. 1913).
2. Write a note on the industrial and other benefits of (a) General Education and also (b) Technical Education.

CHAPTER V.

CAPITAL.

WEALTH AND CAPITAL.

The relation of Wealth to Capital has been already noted. (Book I, Chapter V, pages 88—90.) All wealth is not capital.

Wealth consists of (1) consumption goods; (2) production goods. Production goods are again dividend into—

- (i) *Land.*

(ii) *Capital goods*. As has been already explained (Page 90 footnote), the distinction between Wealth and Capital often is at bottom largely a psychological one.

Are Land and Intelligence Capital?

Capital is something produced by human endeavour. Land is not produced by human endeavour, it is a free gift of Nature to society, and so it is not social capital. Similarly intelligence and other natural endowments are not social capital. [Land is however capital from the individual standpoint (Page 93)].

Classification of Capital.

The division of capital into classes, viz. *individual trade capital and social capital, consumption capital and auxiliary capital, fixed capital and circulating capital* has been also given in Book I, Chapter V. Capital is also divided into :

(i) *Specialized capital* which is suited only for a single industry or for a very small number of uses.

(ii) *Non-specialized capital* or *unspecialized capital* is capital which is suited for use in more than one industry. Good examples of non-specialized capital are factories so constructed and equipped that they can be used in more than one industry.

The specialization of capital is a matter of degree, capital in some cases being more specialized than in other cases.

Prof. Gide distinguishes between :

(i) Wealth which actually serves the purpose of production, *productive capital*.

(ii) Wealth which serves only to bring in an income to its owner, *lucrative capital*.

Bohm-Bawerk in his book on Capital approves of this classification. He prefers however to give to productive capital the name of social capital and to lucrative capital that of individual capital meaning thereby that the former alone counts as capital for society, the latter being simply capital for the individual.

Productivity of Capital.

Capital is one of the factors of production. It is not a primary factor, but it is a factor of subordinate order derived logically and chronologically from two other factors, viz. Labour and Land (Nature).

On account of this derived and subordinate character of capital, Prof. Gide prefers to call it an *instrument of production*.

Capital (consisting of raw materials, tools, machinery, etc.) alone by itself is not productive; "it is nothing but inert matter and itself absolutely barren. If there are no labourers and no organization to utilise capital, then capital will produce nothing. Capital becomes productive only by being utilised by labourers. Again labourers cannot work without the aid of capital in the shape of raw materials, tools, machinery and other things.

(Capital being largely the product of past labour, when we say that labour is fruitless without the help of capital we maintain that *present labour* requires the help of *past labour* in the work of production).

A labourer working with his hands alone and without the aid of capital (e.g. the plough and other agricultural instruments, cattle, etc.) will produce very little corn if anything at all; the same labourer working with capital will produce a much larger quantity of corn. The increase in the quantity of corn is due to the aid given by capital.

Other things being equal, the labourers are able to produce more, the greater the quantity of capital helping them. For example, labourers working in factories aided by a large quantity of capital in the shape of the best machinery, etc., are able to produce much more than labourers working with a small quantity of capital (in the shape of cheap hand tools and not machinery).

Theories about Capital.

There are many theories about Capital, about its functions and its services to society. Gide points out that these theories can be reduced to two chief classes holding opposite views:

- (i) The theories of the classical economists.
 - (ii) The theories of the socialists.
- (I) *The theories of the classical economists.* These economists point out that man cannot produce wealth without capital. Even a Robinson Crusoe beginning life in a solitary island required a certain amount of capital in the shape of tools and some provisions, etc.,—and without this initial capital saved from the wreck of the ship, he would have been unable to maintain his life in his desert island.

Man in civilized societies cannot engage in any productive industry without the help of capital. Either he must have command over capital himself, or he must become a wage-earner under a capitalist who will

Capital will remain an indispensable means of production in all periods of economic history. The definition of capital by the classical economists lays stress on this *productivity of capital*, on the necessary, essential and permanent characteristic of capital; and thus their definition is nearer the truth than the socialistic conception of capital which looks only at the "*rentability*" of capital (i.e. its power to produce an income for the owner), its transient and contingent characteristic which may disappear in course of time.

provide him with the necessary amount of capital in the form of raw materials, tools and other things necessary for production. And the greater the quantity of capital possessed by society, the more efficient will be its production. Indeed Gide says "The power to produce increases in geometrical progression to the quantity of wealth already acquired."

The classical economists therefore maintain that Capital is absolutely indispensable to the production of wealth by man. They emphasise the *productivity* of capital, they declare that capital renders services to production the importance of which cannot be over-estimated.

This has been called the naturalistic conception of Capital.

(II) *The theories of the socialists (e.g., Marx, Rodbertus, Lassalle, and others).* The writers of this school emphasise what Gide calls the *rentability and not the productivity* of Capital. They regard *Capital as wealth which enables a man to command the labour of other men, and thus to secure an income without his personal labour.....* at least without any other labour than that of keeping an eye over his investment and realizing the interest and profits.

According to the socialists, capital in the sense understood by them is a *historical category*, the result of economic evolution, a product of history and is due to the exploitation of the lower classes by the so-called upper classes; it is a temporary phenomenon which has appeared as a result of certain historical conditions and capital in this sense will disappear when these conditions will change with the triumph of the socialist movement.

This conception of capital is called the *juridical* conception as opposed to the *naturalistic conception*.

The advocates of these two opposed groups of theories carry on a bitter controversy. The followers of the first theory declare "what a useful servant Capital is since even a Crusoe cannot live without it." Those who support the second theory answer in reply what a tyrant capital is "since it can exist only on the labour of others." These theories cannot be fully discussed without examining them from the point of view of distribution.

In the words of Gide "there is no necessary contradiction between these two theories, each lays its stress on one of the powers of capital, the first theory looks on the natural, permanent and economic characteristic of capital; the other at its acquired, relative and juridical characteristic."

***Production with Capital is a round-about process.**

Production with capital as distinguished from production without capital is a round-about method of production. The greater the industrial advance made by a country, and the larger the amount of capital at its command, generally speaking the more round-about is the method of production. Round-about production means that production is not direct, but that the productive process is indirect and is prolonged, consisting of several stages. Modern methods of round-about production involve the splitting up of the productive process into successive stages and the use of machinery on a considerable scale in these different stages to increase the efficiency of production. Round-about methods of production are followed not because they are round-about but because they are economical and efficient ; they are economical because they provide ample scope for the efficient use of machinery and other mechanical aids and the great economies resulting from them.

In a community following the modern round-about process, a considerable proportion of the people are engaged in making instruments and machinery to be used in these round-about processes ; and the result is that labourers of that community are very liberally supplied with mechanical aids, e.g., tools, machinery of different kinds, means of transport in the shape

In an earlier stage of economic evolution, capital was the tool of the manual labourer and thus it possessed the characteristic of productivity and not of rentability.

With the progress of economic evolution, capital has gradually passed out of the control of the manual labourers into the hands of the rich and in many cases the idle rich ; it is thus now not merely a help to labour, it now enables the rich to command the labour of poor persons and thus it allows the rich to procure an income without working for it. This new social system is characterised by the socialists as *Capitalism* but the present system is only a temporary phase in the history of economic evolution and during the present stage and also in other stages which will succeed the present system, capital will continue to retain its permanent economic characteristic, viz., productivity.

* "The productivity of capital consists in the aid which it renders in securing the same results with less effort. It is an adjunct to human labour, and to that extent lessens labour by interposing something between labour and its result. The function of capital might therefore be called the roundabout method of production" (Seligman—*Principles of Economics*).

of railways, steamships, etc., and therefore the efficiency of production is very great.

The Growth of Wealth (and Capital) in a Community.

(The causes and conditions which influence the accumulation of wealth differ extensively in different countries and at different periods of history) and even among the same people (e.g. the English people) the different social classes will not be influenced in this matter by exactly the same causes. Social and religious customs and ideals by discouraging or encouraging extravagant expenditure and in other ways will help or hamper greatly saving and the growth of wealth. For example, Indian customs and practices favouring lavish expenditure on caste feasts in connection with marriages, funerals, etc., act as a check on the growth of wealth.

Subjective and Objective Conditions of Saving.

Economists distinguish between subjective (mental) and objective (external) conditions of saving.

I. Subjective conditions relating to the growth of Wealth.

1) Foresight.

The growth of wealth among a people depends upon the development of the habit of clearly forecasting the future and making suitable economic provision for it. This habit has developed slowly and somewhat painfully in the history of man. Savages* do not possess it; and even among the industrially advanced European races there will be found a large proportion of men who have not this habit or have it only in a very limited degree. In India we have the element of foresight in substantial measure among the middle class but to a much smaller extent among the lower classes.

(English writers generally remark on the comparatively small development of the habit of saving among the Indian people. The Indian people are said to make "intermittent provision for the near future but scarcely any permanent provision for the distant future,"

* As an extreme example of want of foresight, Prof. Gide quotes the case of the Orinoco savage who sells readily his hammock (a kind of hanging-bed) in the morning but not in the evening. He forgets in the morning that he will require his hammock in the evening.

i.e., they are said to save money for spending it on funeral and marriage feasts but not for permanent investment in railways, irrigation works and other productive enterprises. This view contains elements of truth; it applies to some extent to the Indian peasantry, but it must be remembered that the Indian agriculturists' power to save is extremely limited, there being little or no surplus above necessities in most cases. The saving spirit is however very strong among the Indian middle classes).

(2) Motives of Saving.

The chief motive which induces men to save is family affection. And family affection is nowhere stronger than in India.

Men desire to make adequate provision for their families, a provision which will be sufficient to maintain their families after their death at a suitable standard of comfort; and with this object they save often at the expense of considerable personal discomfort.

The ambition of elevating the position of one's family in the social scale—this also acts as a strong stimulus to saving.

Other powerful motives are also in operation.

There are a few persons who save not for their families, not for their own use but merely because they have acquired a sort of mania for accumulating *wealth for its own sake*.

Again the desire for power sometimes leads men to accumulate wealth. Wealth gives power over other men in the economic sphere and also political and social influence; and many ambitious men pursue wealth not for its own sake but for the power that wealth carries with it. A Cecil Rhodes cares more for the power that wealth gives than for wealth itself.

II. Objective conditions relating to the growth of Wealth.

(1) *A surplus above necessities of life.*

To make saving possible, production of wealth must be in such quantity that there is a surplus above the necessities of life. Obviously when there is no such surplus, when the people have only the bare necessities of life or even less than that—under these circumstances the people are not in a position to save.

In India only a comparatively small proportion of the population has a surplus above necessities and so naturally the accumulation of wealth in India proceeds at a slow rate. In England a much larger proportion of the population has a substantial surplus above necessities, and there an immense quantity of wealth accumulates annually.

(2) *Security of life and property.*

Where there is security of life and property, saving is encouraged. For what a man saves will be his own.

During the decline of the Moghul Empire in India, the country devastated by incessant wars and plundering bands of marauders had no security to offer to the people—and naturally the people became thriftless; they would not save because they would not be able to enjoy the fruits of their savings. Excessive taxation and bad laws also introduce a sort of insecurity. If the taxes are so high, that they leave little to the people then they have no incentive to industry and thrift and so there will not be much saving. Bad laws (*e.g.* the English Poor Law at the time of the Napoleonic Wars) which tax the industrious and thrifty for the benefit of lazy wastrels also discourage the growth of wealth.

The greatly increased security against excessive taxation, against bad laws and against loss of property by robbery which is found in the progressive states of the present day has very powerfully influenced and stimulated the growth of wealth.

(3) *The use of money.*

When man is yet uncivilized, and has not yet learnt the use of money, he has to save that particular commodity (corn or any other thing) which he produces. That particular commodity may be more or less perishable and also it may not readily exchange for other commodities which he may want in future. Money however is not perishable; and it always exchanges readily for other goods. Hence it is immensely more convenient to store money than to store any other commodity—and the mere use of money thus helps saving and the growth of wealth.

(4) *Opportunities for profitable and safe investment, e.g., banks, joint-stock companies, etc.*

Modern conditions have enormously increased the facilities and the opportunities for the investment of capital and have thus stimulated the growth of wealth.

A people without the facilities for the safe investment of wealth will suffer from serious disadvantages in its attempts to save ; if the people store wealth in their houses there is the risk of loss by fire, by robbery and in other ways. *Commercial and Industrial Banks* offer safe custody of the wealth and in addition pay also some interest ; and *joint-stock companies* of different kinds afford opportunities for investment of capital to small investors who cannot themselves engage in business, they offer varied opportunities for the investment of capital—and thus increase the desire for saving.

Some opportunities for investment exist in India ; but conditions here are still much worse than in Europe and America, and they seriously hamper saving and the growth of wealth. We have not many banks ; and only a few joint-stock companies enjoy the complete confidence of the public.

Some institutions for facilitating saving are the following :—

(i) *Savings Banks* which enable persons to save *small sums* and to accumulate in this way a little capital. Savings Banks at first were private institutions ; now-a-days in almost every civilized country, there is the State Savings Bank with branches in all the Post Offices.

(ii) *Insurance*.

Insurance institutions (which in return for periodic payments by an individual offer his family a certain sum after his death) enable many a man to save who would not otherwise have done so. In addition to life insurance, we have also insurance against sickness, unemployment and other ills of life.

(iii) *Co-operative Societies*.

(a) *Consumers' Co-operative Societies*. In a store worked under the system, the store by buying goods wholesale and selling them at the usual retail prices to the consumers will make a profit and the profit made by the store will be divided at the end of the year among the consumers.

(b) *Co-operative Credit Societies*. These institutions facilitate saving amongst small agriculturists, small artisans and shop-keepers. Their chief aim, however, is to cheapen credit for the members by offering joint security of all members instead of individual security.

(5) The Rate of Interest and how it influences the growth of Capital.

What is Interest?

A man who borrows capital from another has to pay to the creditor interest on the borrowed capital. Why is this interest paid?

(1) *Interest is the reward of abstinence (the earlier view).*

The accumulation of wealth has been regarded by some economists as the result of abstinence by the accumulator, abstinence being used by them in the sense of abstaining from and sacrificing present pleasures for the sake of future pleasures.

Objection has been taken chiefly by socialist writers to the use of the word "abstinence" in this connection, they maintain that abstinence implies some privations or sufferings on the part of the abstainer ; and they point out that rich persons who live luxurious lives and yet manage to save a great amount of wealth even after indulging in extravagant luxuries cannot be said to practise abstinence in the true sense of the word. [It is clear that the writers whom the socialists criticise, use the word "abstinence" in one sense—in the sense of postponing present pleasures to future pleasures without necessarily implying any privation and suffering on the part of the man practising such abstinence ; and the socialists are using "abstinence" in a somewhat different sense, they maintain that abstinence always involves an element of pain and privation.]*

(2) *Interest is the reward of waiting (Marshall's view).*

In view of the above controversy Marshall following Macvane has decided not to use the word "abstinence," and he says that "*it is better to say that the accumulation of wealth is generally the result of a postponement of an enjoyment (i.e.*

* "The socialist Lassalle sarcastically refers to this supposed 'abstinence' of millionaire capitalists like the Rothschilds when saving some part of their huge income as capital, after indulging in all possible luxuries ; and the great socialist thinker Karl Marx scornfully refers to that "queer saint, that knight of the woeful countenance, the capitalist abstainer."

giving up a present enjoyment for the sake of future enjoyment to be secured by savings) or a waiting for it."

"According to Marshall the accumulation of wealth is thus the result of waiting, and interest is the reward of this waiting. This view which regards interest as the reward of 'waiting' is criticised by Edwin Cannan and others.

For other modern theories (including the Austrian Theory and also the Socialist Theory of Interest) refer to Part II, Book V, Chapter V.

Influence of the Rate of Interest on Saving.

In some cases like much of life insurance and savings bank deposits, men will save to provide for the future even if no interest (i.e. a zero rate of interest) is paid to them. Economists have also discussed cases in which men to provide for future wants if necessary will even pay interest on their savings instead of receiving it.

In many cases men however are encouraged to save by the interest which they get on their savings.

Other things being equal, the higher the rate of interest, (i.e. the greater the reward of waiting), the greater will be the willingness of persons to wait and to save capital by postponing present enjoyments. Therefore, *other things being equal, a rise in the rate of interest will increase the desire to save capital and thus will stimulate the growth of wealth. Other things being equal, a fall in the rate of interest (i.e. in the reward of waiting) will diminish the desire to save and will thus lessen the rate of the growth of wealth.*

There are certain exceptions to these general rules. For example, a man, who desires to provide a certain annual income for his own old age or for his family after his death will have to save more to get that annual income when the rate of interest is low than when the rate of interest is high. In such a case the man will save more when the rate of interest is low than when the rate of interest is high. Suppose the man wants an annual income of Rs. 4000 after his retirement from business. He will have to save Rs. 40,000 to get an income of Rs. 4,000

when the rate of interest is 10 per cent. ; and to get the same annual income he will have to save a larger sum, *viz.* Rs. 80,000 when the rate of interest is lower, *viz.* when it is 5 per cent. (Note however that though some men will desire to increase their savings when the rate of interest is lowered, only a few persons with comparatively large incomes will be able to do so).

Saving, Investment and Replacement of Capital.

Men in a modern society save capital very generally in the form of money ; and they save to provide for the future.

Now saving may take either (i) the form of *hoarding*, (ii) or of *investment*.

Hoarding does not help production. The Indian people (like other peoples backward in industrial civilization) have practised hoarding for a long time ; and the enormous quantities of precious metals thus hoarded do not render any service to production, and constitute a grave defect in the Indian economic situation.

It is saving in the form of investment which helps production ; and in modern industrially developed societies, (e.g. Germany or England or the United States) the greater part of the savings of the people is invested, and not hoarded. Men, when they have saved money, lend it to a bank and keep the money in the bank ; and the bank lends the money to be used for productive purposes in manufactures and commerce. Manufacturers borrow from the bank to buy raw materials and machinery and to pay labourers, and merchants borrow to carry on their trading operations. *As regards investment bankers thus serve as middlemen*, linking the individuals who save to the manufacturers and merchants who borrow and use this capital for the purpose of production.

Capital invested in machinery, buildings, and in other forms has to be constantly renewed and replaced. This is called the replacement of capital, and the fund for this purpose is called the *Replacement Fund* of society. Take a machine. It does not last for all time. It lasts only for a certain number of years. And then it has to be replaced by a new machine. So with buildings. So with dockyards, rail-roads and other forms of capital.

A Note on Indian Conditions.

The Growth of Capital in India. Foreign Capital. The Hoarded Wealth of India.

(A) The Growth of Capital in India.

As regards *subjective conditions* helping the growth of capital, *family affection* among all classes is nowhere in the world stronger than in India. *Foresight* there is among the trading classes and the middle class, but not sufficient perhaps as regards the poorer classes of the Indian people ; and there would be more of foresight with the increase of education among all sections of the population and the spirit of helpless fatalism bred of age-long poverty and oppression would then disappear.

As regards the *objective conditions* helping the growth of wealth (and capital) in a country, in India at present we have a substantial amount of security of life and property and the use of money, but because of the great poverty of the Indian people due to backward agricultural and industrial conditions there is little or no surplus above the necessities of life for the vast majority of the Indian people—and hence they can save but little as capital. There are also not a sufficient number of banks and other institutions in rural areas offering opportunities of safe and profitable investment to the rural agricultural population.

At present in India, landlords, merchants, large-scale capitalist manufacturers and the upper grades of professional men and men in government service are able to save because they have a surplus above necessities ; but the greater part of the agricultural and industrial population cannot save much as they have little or no surplus. *In India, we must have great improvement in agriculture and industry to increase the surplus above necessities for the population and rapid diffusion of education for increasing the desire to save. And the capital that will be saved must be made available not only for large-scale capitalist manufacturers and merchants to help them in their work of production, the capital must be made available to help the small-scale producers in agriculture and*

small industries as far as possible by democratic organization of credit through co-operative credit societies, etc.

(B) Foreign Capital in India.

Because of the great poverty of the Indian people in recent times due to backward agricultural and industrial conditions, *India at present has not sufficient accumulated capital of her own* and does not accumulate sufficient capital annually to carry on her agriculture, manufactures, railways and other forms of transport, etc. Indian agriculture is starving for want of capital, this is also the case with Indian handicrafts and small industries in the villages and towns; and the statement also applies to many Indian large-scale industries organized under modern conditions.

So *India* (like Australia, Canada, South Africa and other British Colonies, like Japan and other independent states with no sufficient capital of their own), *has to import foreign capital* and largely from Britain.

The amount of foreign capital invested in India amounts to hundreds of crores; and this foreign capital is not invested in Indian agriculture or small-scale industries under Indian management,—practically the whole of this foreign capital is invested in tea, coffee and other plantations under European management, in the mining of gold, coal, iron and oil, etc., in large-scale manufacture in jute mills, woollen mills, tanneries, etc., in banking and insurance, in railways and other forms of transport, all (or almost all) under European management.

Different views are possible and do exist on the question of the use of foreign capital in India.

I. The view of the extreme advocates of the use of foreign capital—These extreme advocates chiefly consist of European merchants and manufacturers (with their bureaucratic supporters) and they assert “.....there can be no doubt that, though the foreign capitalist may get his profit, the main advantage from the employment of foreign capital remains with the country in which it is employed.”* And

* Report of the Indian Fiscal Commission (Chapter XV).

they oppose any differentiation by the Indian Government between foreign and Indian capitalists in favour of Indian capital.

II. The view of the extreme opponents of the use of foreign capital—These extreme opponents oppose more or less the use of all foreign capital in India under present economic and political conditions on the grounds that—

(a) foreign capital injures the economic interests of the Indian people in important respects ;

(b) foreign capital is opposed to the political and economic progress of the Indian people as foreign capitalists always oppose measures of political and economic reform by the cry of 'Capital (foreign) in danger'.

III. The middle view is that foreign capital has its uses and also its abuses,—*that the use of foreign capital is necessary and desirable in certain industries and under certain conditions but not in other industries and under other conditions.*

Against the extreme opponents of foreign capital, we have to point out that the use of all foreign capital is not to be condemned simply because it is foreign. Against the extreme advocates of foreign capital, we have to point out that foreign capital is not always and wholly beneficial—*that under certain conditions and specially in certain industries, foreign capital leads to grave evils and abuses in several respects, e.g. the use of foreign capital* is undesirable in Indian mines, also to some extent in banking and shipping (though unavoidable under present conditions) ; and in most industries the use of foreign capital is not so much of an evil as the use of foreign capital under foreign management (for the foreign management will*

* As was pointed out by the late Sir Vithaldas Thackersey, a great industrialist of Bombay, "when we turn to the petroleum industry in Burma, the gold mines of Mysore, the coal mines of Bengal, the tea and jute industries, the carrying trade by sea and the financing of our vast foreign trade by foreign banks, we come upon another and a less favourable aspect of the use of foreign capital. It is impossible to estimate accurately the amount of wealth that goes out of the country in this manner though an approximate idea can be had of it from the excess of our exports over imports."

take the profits of business out of India, in addition to the interest on the capital, while India using foreign capital under Indian management will have to pay only the interest on the foreign capital and not any profit).

One following this middle view may describe the use and abuse of foreign capital, its advantages and disadvantages somewhat in the following fashion :—

Foreign capital, its uses and advantages.

I. *India does not possess all the capital required for developing her mines, modern large-scale manufactures and modern forms of transport (railways, etc.), and so at present foreign capital is of great use to India :—*

(i) Foreign capital has constructed the important railways connecting the different provinces of India, helping the economic and political unity and growth of the Indian people ; (ii) helping the establishment of the modern industrial organization in India ; (iii) and helping also the work of famine relief by quick transport of food supply during the time of famine.

(ii) Foreign capital has developed modern large-scale production in India by establishing jute mills in Bengal, cotton mills (most of the Indian cotton mills are however worked with Indian capital and under Indian management), woollen mills, paper mills, sugar factories, etc., in other parts of the country giving employment to a considerable number of Indian labourers and clerks.

II. *Foreign capital has also great educational value for the Indian people in connection with Indian industrial development.* "It is to the foreign capitalist that we must look largely at first for the introduction of new industries and for instruction in the economies of mass-production. By admitting foreign capital freely India admits the most up-to-date methods and the newest ideas, and she benefits by adopting those methods and assimilating those ideas."

The mills, the mines, the railways worked with foreign capital and under foreign management constitute a sort of industrial education for the Indian people supplying models and

stimulating Indians to start such things under Indian management and if possible with Indian capital.

This educational value of foreign capital, and also the use of foreign capital in railways are of great use and advantage to India.

The foreign capitalists who send capital for investment to India, and also the foreign management, do these things for their own benefit and to get interest on the capital and profit for the management ; but incidentally India has also derived certain benefits (already noted) from this use of foreign capital in India.

Foreign capital, its abuses and disadvantages.

The use of foreign capital under present conditions in India is attended with some serious evils :—

(i) *Foreign capital so largely employed in Indian mines exhausts permanently the fixed stock of mineral wealth in the country leaving nothing for future generations of Indians (when they will have capital of their own to work their own mines). The mines once exhausted are exhausted for ever ; this is not the case with land in agriculture. At present a few thousands of Indians get wages as coolies and clerks in the Indian mines under foreign management, and if India can maintain 300 millions, she can maintain these thousands somehow also in other employments—and India should not allow Indian mines to be permanently exhausted by foreign capital leaving nothing for future generations of Indians.*

The remedy is to check the use of foreign capital in Indian mines as far as practicable (mines being exhaustible sources of national wealth) ; and to compel by law foreign companies to take a substantial proportion of Indian directors and Indian capital held by Indian shareholders thus reserving Indian mines in an increasing degree for Indian capital and enterprise.

(ii) *Foreign capital in India employed in mines is more harmful than in manufactures (e.g. jute manufactures, cotton manufactures, etc.), for mines are exhaustible sources of wealth which manufactures are not.*

Yet foreign capital employed in manufactures under foreign management takes away from India (a) interest on the capital, (b) also large profits for the organisation and foreign management ; and we should try to keep the enormous profit within the country by using foreign capital but under Indian management by voluntary arrangement with the foreign capitalists if possible (and in suitable cases by legal compulsion). Japan and Australia and other modern countries borrow and use foreign capital but under their own organisation and management and so they have only to pay interest on the foreign capital reserving enormous profits for the people of the country.

(iii) Again foreign capital (chiefly British capital) under foreign management employed in banking, transport (railways, shipping, etc.) partly deliberately and partly through unconscious race-bias favours greatly British manufacturers and commercial interests in India and in Britain against Indian manufacturers and traders—and this hampers very seriously Indian capital and enterprise.

The remedy is this : Steps should be taken by voluntary methods (and in extreme cases if necessary by legal compulsion) to make foreign banking and transport companies admit gradually Indian capital and enterprise to a large and predominant share in ownership, control and management ; and Indian industries and commerce will be able then to occupy their rightful place in their country.

(C) The Hoarded Wealth of India.

It has been suggested that a large addition to Indian capital for the purpose of developing Indian industries and commerce may be made from the hoarded wealth of India ; this hoarded wealth lying scattered and unproductive in the hoards of peasants and princes and others all over India has been estimated variously to amount to 500 to 800 crores of rupees. Of course it is *desirable that the Indian banking system with Indian capital and management should be much more extensively diffused throughout the country attracting capital from these hoards and using this hoarded wealth as far as possible*

to develop India's trade and industries—and incidentally this would make India also less dependent on foreign capital.

It is to be noted however that the hoarded wealth of India amounts to about Rs. 20 or thereabouts per head of the population, and so is not large ; and that only a small portion of it is in the hands of the masses as is shown by the heavy mortality among them during times of famine, and that a great part of this hoarded wealth consists of jewellery, etc., in the hands of princes, landlords and merchants, etc.—and that in fact the hoarded wealth in the form of jewellery, gold and silver plate, etc., is very much larger in proportion to the population in other countries than in India.

So India is not the only country with hoarded wealth ; in fact India has a smaller amount of hoarded, unproductive wealth per head of the population than many rich and progressive countries of Europe,—though perhaps her hoarded, unproductive wealth is large as compared with her total capital available for her industries and commerce (her total capital being small in comparison with her population and the needs of her agriculture, industry and commerce).

With the development of modern banking in India and the expansion of the co-operative movement, the unproductive hoarding of wealth has decreased and is fast decreasing.

CAPITAL.

Summary.

Wealth and Capital.

All wealth is not capital.

We have to distinguish between (a) trade capital and social capital ; (b) consumption and auxiliary capital ; (c) specialized and non-specialized capital. A distinction is also made between fixed and circulating capital, but the distinction is not a hard and fast one.

Production with capital is a round-about process—it enormously increases the efficiency of production by providing ample scope for the use of machinery and other mechanical aids in the lengthened process of production.

The Growth of Wealth.

The causes and conditions which influence the accumulation of wealth are not the same in all countries and at all times; indeed they are not the same even among the different classes of the same people in the same country and in the same time.

Subjective and objective conditions of saving.

The principal subjective conditions are (1) development of foresight, and (2) growth of family affection which is the chief motive to saving.

The objective conditions are (1) a surplus income above necessities of life, (2) security of life and property, (3) the use of money, and (4) the existence of banks, insurance companies and other institutions providing opportunities for safe and profitable investment.

The rate of interest influences saving and the growth of wealth, and a fall in the rate of interest diminishes it—this is the general rule but there are exceptions.

The formation of capital involves 'abstinence' or as Marshall puts it 'waiting'—interest is the reward of this 'waiting.'

QUESTIONS.

1. Classify 'capital.'

Are Land and Intelligence capital? (A. U. 1903).

2. What are the influences which affect the accumulation of wealth in a country? (C. U. 1916).

Illustrate by references to Indian conditions.

On what does the growth of wealth devoted to productive purposes depend? (C. U. 1919).

What do you understand by capital? How does capital originate? Distinguish between fixed capital and circulating capital. (C. U. 1921).

3. Write a short note relative to the influence of the rate of interest on saving. Give Indian examples.

Discuss the effect of the rate of interest on the growth of capital in a country. (C. U. 1928).

4. Write a note on the use and abuse of foreign capital in India. Indicate carefully the limits of its usefulness.

CHAPTER VI.

INDUSTRIAL ORGANIZATION.

Machinery. Division of Labour.

Organization and Efficiency.

In the preceding chapter, the agents of production, land, labour and capital, have been studied separately. The nature of each of these agents and some of the principles determining its efficiency and also the increase in its supply have been examined, and now we shall study the organization of the agents, their co-operation in the work of production.

The idea that increased efficiency results from organization is a very old idea—it was understood in ancient Greece and also in ancient India.

Within recent times economists have learnt a great deal from biologists like Herbert Spencer* as to how organization increases efficiency.

Spencer has shown that the development of any organism, social or physical implies (i) an increased sub-division of functions (this is called "differentiation") between the different parts of the organism (ii) and at the same time a closer connection and inter-dependence of these different parts (this is called "integration"). The development of the economic organism involves (i) increasing differentiation in the form of increasing division of labour and the increasing specialization of machinery, etc. ; (ii) and also increasing integration of different parts of the economic organism through development of communication facilities by railways, steamships, post and telegraph, etc.

[The terms specialization of labour and specialization of machinery are often used to mean differentiation of labour (i.e. division of labour) and differentiation of machinery.]

* See also Herbert Spencer's *Sociology*, Ch. V.

"But along with advance of organization, every part, more limited in its office, performs its office better; the means of exchanging benefits become greater; each aids all and all aid each with increasing efficiency, and the total activity we call life, individual or national augments."

Problems of Industrial Organization.

We shall approach the problems of industrial organization in the following order :—

I. *Machinery and division of labour*—development of industrial organization in modern times as manifested in increasing specialization of labour and machinery.

II. *Geographical Division of Labour and Localization of Industry*—local specialization in industry.

III. *Large-scale and Small-scale Production*—size in organization.

IV. *Control of Business*—system of business management.

Machinery.

A very characteristic feature of the modern industrial organization is the rapid increase in the quantity and complexity of machinery used in modern industry. *The modern system is essentially the system of machine industry*—more and more machinery being used for the purpose of manufacture, transport, mining and even in the agricultural industry.

The use of machinery is comparatively recent. In fact not much progress has been made in the discovery and the application of machinery till the middle of the 18th century. England is the pioneer in modern capitalism based upon machinery production ; and England's example has been followed in course of time by Germany and other European countries and by the United States of America. In India, the machine system has yet been introduced only in part. A great deal still remains to be done.

What is a machine ?

A machine is to be differentiated from a tool. A modern machine in its developed form consists of three parts, which though mechanically connected, are essentially distinct, (1) the motor mechanism, (2) the transmitting mechanism, and (3) the tool or working machine. "The motor mechanism is that which puts the whole in motion. The transmitting mechanism

.....regulates the motion.....and divides and distributes it among the working machines. These two first parts of the whole mechanism are there solely for putting the working machines in motion.....”*

Province of Manual Labour and Machinery.

What kinds of work are done by machines?

Work which is too heavy to be performed by manual strength, work for which human limbs are not delicate enough or untiring enough or accurate enough—these sorts of work will be gradually taken over by machinery from the province of manual labour. When work has been reduced to a number of routine operations, each operation being required to be repeated in exactly the same way again and again, then each such operation is at the stage when manual labour will be soon supplanted by machinery. The reason is clear ; machinery performs routine operations more efficiently and cheaply than manual labour.

Specialization of Labour and Machinery.

(As industrial organization proceeds, machines become more and more specialized.) Instead of one machine doing different kinds of work, we have more and more the use of specialized machines, each made for one special kind of work. For example, one sawing machine does the rough sawing work, another does work which is not so rough, and a third is for the finest bits only.

In modern times we find a great deal of specialization of machinery ; and specialization means efficiency. The use of machinery leads to large-scale production ; and with the growing use and specialization of machinery, there is a larger and larger scope for increasing specialization of labour (i.e. division of labour of all sorts). The economies resulting from specialized labour and machinery have added immensely to the efficiency of production.

* Karl Marx—*Capital*.

Effect of Machinery—its advantages.

Machinery has largely transformed the character of modern industry. It has profoundly affected the efficiency of production, and the scale of modern business, increasing and limiting competition, and under certain conditions leading to the formation of Trusts and monopolies. On labour also, its influence has been great—machinery has affected in far-reaching fashion the quality of labour and life, unemployment and also wages.)

The advantages of machinery in connection with (A) increasing the efficiency of production and (B) improving the quality and the position of the labourers are the following :—

(A) Machinery and its influence on efficiency of production.

(The use of machinery has enormously increased the efficiency of production in almost all modern industries.)

(i) Heavy, arduous tasks. Machinery by utilising the stupendous forces of nature (e.g. steam power, electric power, etc.) enables man to perform excessively heavy kinds of work which without the aid of machinery would be quite beyond the strength of man. For example, heavy hammers weighing hundreds of tons and used in the armour-plating industry (which makes thick steel plates for protecting battle-ships, etc.) and some of the metal trades—these can be wielded by man only with the help of machinery. Other illustrations of heavy work done by machinery will readily occur to the mind of the reader.

(ii) Machinery will do work much faster* than it can be done by human labour ; and in this way also there will be a gain in efficiency.

(iii) Delicate kinds of work. Machinery is not only superior to manual labour as regards exceedingly heavy tasks but also as regards extremely delicate kinds of work.

* As regards fast work, a modern printing machine will print off large newspapers at the rate of 20 miles an hour, and a modern match machine will manufacture a quarter of million matches in one hour.

(iv) Machinery works *more accurately** than man ; this is because a machine will exactly repeat the same movements again and again any number of times, but this even the most skilful workman with his hands will sometimes fail to do.

So as regards work in which mechanical accuracy is essential, the use of machinery is clearly more advantageous than the use of manual labour ; but where artistic feeling is required in a manufactured product, there of course hand production by an artisan with true artistic instinct will be certainly superior to the mechanical reproduction of the same pattern by machines.

(v) *The system of interchangeable parts in machinery increases the use of machines and thus promotes efficiency of production.* Machines are now often made by machines. In such a machine-made machine, each part has a number. A man using a machine in a distant rural part, and having a part broken can now easily and quickly repair it by telegraphing the number of the damaged part to the machine factory in the town and getting an exact interchangeable part by the next train. He has not to send the whole machine to the town for repairs ; and he has not to wait for several days for a mechanic to come down to him to repair his machine.

Such exact interchangeable parts of a machine can be made only by machines and not by manual labour ; and this system of interchangeable parts in machine-made machines by facilitating repairs, etc., has led to an enormously increased use of machinery and has thus led to a very great increase in industrial efficiency.

[Hobson (Evolution of Modern Capitalism, Ch. IV) states the effect of machinery on efficiency of production thus "Machinery can only aid man by increasing the motive power at his disposal.

* As regards the *high accuracy and delicacy* of machine-made machines, reference may be made to....."*precision balances which will detect an error of one part in 250,000,000 of a 500 grammes weight. Of course the heat of an observer's body, if he were near at hand, would disturb the equilibrium.....the finest modern engineering work requires gauges true to a ten-thousandth of an inch, which must be read on occasion by a micrometer reading up to a hundred-thousandth part of an inch, i.e., to a two-hundredth part of the diameter of the human hair.*" Marshall—*Industry and Trade.*

(1) Machinery enables forces of man or nature to be more effectively applied by various mechanical contrivances composed of levers, pulleys, wedges, screws, etc.

(2) Machinery enables man to obtain the use of various motor forces, outside his body—wind, water, steam, electricity, chemical action, etc.

Thus, by the provision of new productive forces, and by the more economical application of all productive forces, machinery improves the industrial arts.”]

***(B) Machinery and its influence on the character and intelligence of the labourers and their conditions of work and life.**

We have next to consider the influence of machinery upon the quality of labour, the intelligence and character of the labourers, their skill, and the intensity, monotony or variety of life and labour.

The main conclusions appear to be these:—

(i) *The advocates of machinery maintain that (machinery requires men of some intelligence and responsible character to manage it properly ; it thus increases the demand for intelligence and character and thus improves the quality of labour.)* Many processes in connection with the manufacture of watches and other things which were at first carried on by manual labour and required great and specialized manual skill, are now carried on by machines. In this way *machinery has diminished the demand for specialized manual skill. But machines have, on the other hand, increased the demand for general intelligence and character.* This is because specialized machines are complicated and very highly priced ; and so the men required for attending these machines must be intelligent and with a proper sense of responsibility ; such men will generally earn high wages.

*Marshall's highly optimistic view on this question is not supported in full by Hobson, Nicholson and others—and it is not confirmed by recent events and tendencies in Europe, America and Asia.

On the other hand, the opponents of machinery maintain that the system of machine industry (a) destroys the old artistic handicrafts of the people ruining the artistic side of the national characters, (b) also brings about the physical and moral degradation of the labourers and their women and children and intellectual desolation by the mechanical work in the factory and by the crowding of immense numbers of labourers under unhealthy moral and physical conditions in huge, ugly factory towns. (Refer to pages 226—231).

(ii) *(Machinery has helped to improve substantially the lot of the labourers by reducing the strain on their muscles. Formerly many operations (e.g. sawing and planing of wood for carpenter's work, dressing of stones for building purposes, etc.) had to be done by human muscles, and the work being of arduous character, the strain on human muscles was excessive; now these operations are performed in industrially advanced countries (e.g. England, France, etc.) by machines and in this way the undue strain on human muscles has been substantially removed.)*

Some competent observers (e.g. Hobson and Nicholson and others) maintain that machinery in many cases, while diminishing the output of merely muscular activity, has increased the intensity of the work and of the strain.

(iii) *(Machines diminish the monotony of work.)*

(a) *An important advantage in connection with the use of machinery is that machinery is constantly taking over uniform and monotonous work from the province of manual labour, —work which is uniform and monotonous can be done cheaper by machines than by manual labour. The labourer attending to the machine has only to supply the material and to take away the finished work and also to see that the machine is working properly and is not out of order. This taking over of the monotonous parts of the work by machinery obviously reduces the monotony of work of the labourers, they having now only to do generally those kinds of work which require some intelligence and some sense of responsibility and which have some variety.*

* Machines by decreasing the monotony of work thus help to educate the worker.

(b) Machines reduce monotony of life.

The advocates of machinery also maintain that the *monotony of life among labourers is reduced by machinery and this also is a gain of very considerable magnitude.* In a factory where the labourers work with the aid of machinery, often the physical strain on the labourers is not great,—so his mental faculties remain alert, and the social surroundings in and out of the factory stimulate varied intellectual activity and a capacity for political and social organization.

(iv) *Machinery has diminished the barriers between different industries, and in this way it has helped labourers.*

In earlier times the difficulty in passing from one trade to another was great; but now the machines used in one trade are generally very similar to the machines used in two or three or more other trades. As Prof. Marshall points out, the machines used in a watch factory are not different in character from the machines in a gun-making factory or sewing-machine factory or a factory for making textile machinery. The result is that if there is a diminished demand for labour in one of these industries, some labourers in that industry will be able to pass with comparative ease from that industry to the other industry where similar machines are used and where there is more demand for labour.

(C) Machinery† in relation to unemployment, wages and moral and social life in industrial towns.

The introduction of the use of machinery on a considerable scale has been looked upon with great disfavour by a large

* "Machinery like everything else can only teach what it practises. Order, exactitude, persistence, conformity to unbending law—these are the lessons which must emanate from the machine..... The defence of machinery, from the educative point of view, is its absolute conservatism..... Variety is of the essence of life, and machinery is the enemy of variety." (Hobson—*Evolution of Modern Capitalism*, Ch. XIII.)

† The views of Karl Marx, the great socialist leader of the 19th century and of Mahatma Gandhi, the great leader of the Indian

proportion of the working classes in Europe since the Industrial Revolution. Great teachers like Carlyle, Ruskin and Morris have also attacked machinery production chiefly in connection with the incidental social and moral evils in large industrial towns. And this side of machinery economy has already attracted considerable attention in India.

Non-co-operation Movement, on the subject of machinery are of great interest in view of the rapid progress of socialist ideas in Europe and America and wide-spread propaganda on behalf of the Non-co-operation Movement in India.

Karl Marx says "Since handicraft skill is the foundation of manufacture,.....capital (in the early stages of capitalist production before the introduction of much machinery) is constantly compelled to wrestle with the insubordination of the workmen.

.....The workshop, the product of the division of labour in manufactures, produced in its turn machines. *It is they that sweep away the handicraftsman's work as the regulating principle of social production.*

.....John Stuart Mill says in his *Principles of Political Economy*, "It is questionable if all the mechanical inventions yet made have lightened the day's toil of any human being." That is, however, by no means the aim of the capitalistic application of machinery. Like every other increase in the productiveness of labour, machinery is intended to cheapen commodities, and by shortening that portion of the working day, in which the labourer works for himself, to lengthen the other portion that he gives, without an equivalent, to the capitalist.

.....The machine which is the starting-point of the industrial revolution, supersedes the workman who handles a single tool, by a mechanism operating with a number of tools.

Modern Industry had to take in hand the machine, its characteristic instrument of production, and to construct machines by machines. It was not till it did this, that it built up for itself a fitting technical foundation, and stood on its own feet.

In so far as machinery dispenses with muscular power, it becomes a means of employing labourers of slight muscular strength, and those whose bodily development is incomplete, but whose limbs are all the more supple. *The labour of women and children was, therefore, the first thing sought for by capitalists who used machinery.....* Machinery, by throwing every member of that family on to the labour market, spreads the value of man's labour power over his whole family. It thus depreciates his labour-power.....Previously, the workman sold his own labour-power, which he disposed of nominally as a free agent. Now he sells wife and child.

.....The moral degradation caused by the capitalist exploitation of women and children.....the intellectual desolation artificially produced by converting immature human beings into mere machines for the fabrication of surplus-value.....this desolation finally compelled even the English Parliament to make elementary education a compulsory condition.

.....The immoderate lengthening of the working day, produced by machinery in the hands of capital, leads to a reaction on the part of

(i) *First let us take up the question of unemployment.*

(1) *The use of a new machine in an industry displaces some labourers ; and the machine diminishes the cost of production and the price of the commodity, and this in many cases leads to increased sales of the commodity and the employment of labour ; and often the labourers who have been displaced by machinery in one industry, will get employment not*

society, the very sources of whose life are menaced ; and thence, to a normal working day whose length is fixed by law. Thenceforth, a phenomenon that we have already met with, namely, *the intensification of labour*, develops into great importance.....This is effected in two ways : by increasing the speed of the machinery, and by giving the workman more machinery to tend.

In handicrafts and manufacture, the workman makes use of a tool, in a factory the machine makes use of him.

.....*The instrument of labour, when it takes the form of a machine, immediately becomes a competitor of the workman himself.....* When machinery seizes on an industry by degrees, it produces chronic misery among the operatives who compete with it. *When the transition is rapid, the effect is acute and felt by great masses.* History disclosed no tragedy more horrible than the gradual extinction of the English handloom weavers, an extinction that was spread over several decades, and finally sealed in 1838.....the English cotton machinery produced an acute effect in India. The Governor-General reported in 1834-35 "The misery hardly finds a parallel in the history of commerce. The bones of the cotton-weavers are bleaching the plains of India."

.....The making of the new machinery (i.e. carpet-making machinery) affords employment to a greater number of mechanics, but can that be called compensation to the carpet-makers thrown on the streets ? At the best, its construction employs fewer men than its employment displaces."

.....It would be possible to write quite a history of the inventions of machinery, made since 1830, for the sole purpose of supplying capital with weapons against the revolts of the working-class.

.....*Finally Marx makes it clear that he objects to capitalist employment of machinery in the interest of the capitalist class and not to machinery itself.* "Since therefore machinery considered alone, shortens the hours of labour, but, when, in the service of capital, lengthens them ; since in itself it lightens labour, but when employed by capital heightens the intensity of labour ; since in itself it is a victory of man over the forces of Nature, but in the hands of capital, makes man the slave of these forces" he does not object to the use of machinery under proper conditions and he fully recognises that the modern age is the age of machinery and that the use of machinery under proper conditions immensely adds to the efficiency of national production and greatly adds to the national welfare.

Mahatma Gandhi (partly following Tolstoy and others) *seems to think that the use of machinery under proper conditions is impossible*

in the same industry but in other industries. The community saves money through the fall in the price of the commodity brought about by the use of machinery. And it uses this money to buy more of other commodities, and thus provides employment in other industries for the displaced labour.)

This is however not always the case.

For example, the rapid introduction of machinery and also of foreign machine-made goods have thrown millions of Indian weavers and others engaged in handicrafts and cottage industries out of employment—hundreds of thousands of them have

and that machinery always leads to evils and abuses, and so he advises India to reject machinery and to go back to the old system of handicrafts and cottage industries; in his opinion, the old system means less wealth for the nation but more welfare, the old system provides better physical, moral and social conditions for the mass of the workers than the modern system. To quote his own words in Young India:

"Machinery is the chief symbol of modern civilisation; it represents a great sin. Machinery has begun to desolate Europe.

"The workers in the mills of Bombay have become slaves. The condition of the women working in the mills is shocking.....It may be considered a heresy, but I am bound to say that it were better for us to send money to Manchester and to use flimsy Manchester cloth than to multiply mills in India. By using Manchester cloth, we would only waste our money, but by reproducing Manchester in India, we shall keep our money at the price of our blood, because our very moral being will be sapped.

"As long as we cannot make pins without machinery, so long we will do without them. The tinsel splendour of glass-ware we will have nothing to do with, and we will make wicks, as of old, with home-grown cotton, and use hand-made earthen saucers for lamps. So doing we shall have our eyes and money, and will support Swadeshi, and so shall we attain Home Rule."

Our conclusion is this :

As a matter of fact there is nothing inherently immoral in a machine. Hand tools aid man in production; so also do machines only on a larger scale and with immensely increased efficiency. The abuse of machinery comes from unhealthy social conditions which help the few rich to exploit the many poor and the use of hand tools may be similarly abused—a capitalist employer may exploit a large number of poor labourers working with hand tools as in the Indian shawl industry. And Mahatma Gandhi with his infinite pity for the suffering labourers in Indian mills and mines forgets that the present conditions need not be permanent. For the world has seen the abolition of slavery; and with the growth of social conscience and developing democracy, the world will yet see the abolition of the abuses associated with the modern machinery system and perhaps at no very distant date.

perished, immense numbers have been driven to inefficient agriculture or to the ranks of unskilled labour. The many millions of labourers who have been thus thrown out of employment have not been absorbed into the few new industries employing machinery started in India.

(Refer to page 266).

(ii) *Then as regards wages.*

Machinery by increasing the productivity of industry has in many cases raised wages. Statistical and other indications show that generally the highly skilled and highly waged workers have gained most, and the lowest classes of workers have gained the least.

But the use of machinery leads to this serious* evil—machinery in many industries has an increasing tendency to replace the skill of the skilled worker, and the displaced skilled worker has to accept lower wages and a lower standard of life for himself and his family in some other occupation where his former skill is of little use. This is a great evil for the individual worker and his family and also for society as a whole.

(iii) *Machinery and life in industrial towns.*

Some people also look with a certain amount of distrust upon the increasing use of machinery because they think that machinery production involves the crowding of large numbers of labourers under unhealthy physical and moral conditions in huge, ugly smoky industrial towns.

(With reference to this objection to the increasing use of machinery, it may be pointed out here that the unhealthy physical and moral conditions of manufacturing towns are re-

* Prof. Marshall, a great advocate of machinery and of the modern industrial organization, has to admit this evil result of machines that supplant fine skilled handiwork: "Let us return to the increasing tendency of machinery to supplant the skilled hand; which is greatly increasing man's power over nature, and his material wealth, though it is not an unmixed benefit from the social point of view. *In fact if all the world were a single people, with one purpose and that the highest, it might be well to put some check on this rapid supersession of human skill; even at the expense of delaying the increase of material comforts and luxuries.*"

moveable and have been already removed in a substantial measure in the industrially advanced countries of the world. Modern town-planning schemes also give us the hope that industrial towns can be made beautiful and satisfying from the æsthetic standpoint).

Conclusion.

Machinery increases very greatly man's command over Nature, it makes water-power, steam, electricity, etc., devoted servants of man—and so machinery has enormous advantages, it (i) has immensely increased the efficiency of production in all industries, (ii) has often benefited consumers by reducing prices, and (iii) has also relieved the strain on the muscles of the labourers (though how far as yet it has helped the labourers in other respects is a matter hotly disputed between the defenders of the present capitalistic system and their socialist and other critics and opponents).

*(The disadvantages of the use of machinery are due not to machinery itself but chiefly to the abuse of machinery by the capitalist and employing classes for the exploitation of labour)—and these disadvantages relate to (i) the intensification of labour and strain (of this we have extraordinary revelations in Upton Sinclair's famous novel, The Jungle), (ii) the exploitation of the labour of women and children, (iii) unfair attempts to force down wages and conditions of employment; (iv) unhealthy physical and moral and social conditions in the large industrial towns. These disadvantages are removeable and they can be removed partly by suitable laws made by government, partly by public opinion and higher standards of social conduct among the community—but they cannot be wholly removed except, perhaps by some reconstruction of the modern economic organisation of society which will secure for the labouring classes not only higher incomes and better conditions of employment but also an effective share in the control and organisation of industry. (Refer to *Guild Socialism, etc.*, in Part II.)*

In countries like India in a stage of industrial transition and rapidly passing from the old to the new industrial organization, the introduction of machinery has caused unemployment

and the supplanting of fine skilled hand-work on a vast scale among the millions engaged in the handicrafts—and suitable handicrafts should be preserved and developed, and for other handicrafts a period of transition should be arranged (Refer to pages 266—269).

Also it is desirable that whenever possible workers in agriculture and manufactures (in addition to the ordinary small-scale producer) should be encouraged by co-operative organization, etc., to use machinery—the workers working for themselves and not for masters will be able to extract the maximum advantages from the use of machinery, if the other conditions are not unfavourable.

Always we are to remember that *machinery is for man* (i.e. for increasing the sum total of human welfare) *and not man for machinery* to be used as an appendage of the machine for the benefit of a few capitalists and employers—and *man is not a machine himself*, he is not a means to an end like a machine, but he (i.e. each labourer) has a personality and is an end in himself.

Industrial Organisation (continued). Division of Labour.

What is Division of Labour ?

In a very early stage of society, among primitive barbarians, there is little or no division of labour. Each man has to perform all kinds of labour, he has to produce his own food, he has to hunt animals and catch fish for his own use, he has to make his own clothing, his bows and arrows and even his own thatched hut—he is hunter, fisherman, clothier, carpenter and builder, all in one. With the development of division of labour in a community, some men become farmers, some fishermen, some shoemakers, others clothiers and some carpenters, etc.

And the greater the industrial development of a society, the greater will be the organization of labour and of other agents of production in that society. In the most progressive countries of the present day, under machine production, organization and division of labour have been carried to a very high degree of development. (For example in industrially backward

India, the village shoemaker makes the whole shoe himself: in progressive America, the making of a shoe in a factory is reduced to 80 different operations, each performed by a separate labourer. This is division of labour as modern business men understand it. *And the greater the division of labour, the greater is the efficiency of production, other things being equal.*

The Conditions of Division of Labour—The conditions under which economies in production can be secured from division of labour are given below.

I. *The extent of division of labour depends upon the extent of the market.* To have division of labour on a considerable scale an employer must employ many labourers, and he can afford to employ a large number of labourers only if he produces commodities on a large scale for a large market.

II. Division of labour depends not only upon large-scale production for a large market, it also depends upon *continuous production*. If work is not continuous, if it is occasional, the worker will be compelled not to confine himself to that single occupation. Having only intermittent work in that occupation he will have to find employment for himself now and then in other occupations as well—and thus there will not be complete division of labour.

One reason as to why there is more scope for division of labour in the manufacturing industry than in the agricultural industry is that work is more continuous in manufactures than in agriculture.

To secure the greatest amount of economy from division of labour, each labourer must be engaged *continuously in a narrow range of work*; and the work must be of such a character that the different pieces of work done by him should call forth his utmost skill and energy, it should be such work as his ability and training qualify him to do well, and also he must be suitably provided with machinery and other appliances for work.

***Advantages of Division of Labour.**

(Division of labour immensely increases the productive power of labour—other things being equal, the greater the division

* For Adam Smith's classical example of division of labour from the trade of the pin-maker, see *The Wealth of Nations*, Book I. Chapter I.

of labour the more efficient will be the production of wealth). The efficiency of production is increased in the following ways:

I. *A gain in adaptation giving each worker work suited to his physical strength and skill, intelligence, education and character*—and thus making him do his best in the production of wealth.

(Division of labour makes it possible to divide labourers (men, women and children), into several classes according to differences in physical strength, intelligence, education, energy, resourcefulness, etc., and to give each worker a task suited to his or her individual capacity. In this way the waste which would result (a) from making strong men work at tasks which require little strength and (b) from making highly intelligent and educated men do work which can be performed by comparatively uneducated men with little or no intelligence at all—this waste is avoided. Taking an extreme case we may say that without division of labour a great statesman will have not only to do intellectual work relating to the highest political interests of his country, he will also have to be his own typist, his own clerk, he will have to sweep his own floor and cook his own food,—and of course this would be extremely wasteful. This kind of waste is avoided by division of labour.)

Division of labour thus secures a *gain in adaptation* by finding for each worker work suited to his physical and mental capacity.

II. *(A gain in skill—increase of dexterity through constant practice.*

Under the system of division of labour, constant practice in one operation, in one kind of work increases dexterity in that sort of work—"practice makes perfect."

When there is division of labour, one man does only carpentering work and by constant practice becomes a good carpenter, another man is a weaver and by constant practice becomes a good and skilful weaver, etc.; where there is no division of labour, a man has to do different kinds of work and is equally unskilful in all these kinds of work.)

This gain in skill is a very important advantage springing from division of labour.

III. *(A gain or saving in time)* This comes about chiefly in two ways :

(i) *Division of labour shortens the period of apprenticeship.*

This is because each worker has to learn only one occupation and not many occupations ; and again under the system of detailed division of labour in connection with modern machine production in factories, he has to learn only one single operation of the many operations required in a single occupation (e.g. the shoe-making industry or the pin-making industry, etc.)

(ii) *(Time is also saved as the workman being engaged in one operation only does not lose the time which is usually lost in passing from one operation to another.)*

IV. *Economy of implements and of capital—fewer tools and implements are required, and each implement is effectively utilised.* This is because each workman under the system of division of labour being engaged only in one operation requires a smaller number of instruments than he would require if he were engaged in many different operations requiring the use of different sets of tools. And each workman using one set of tools only keeps it employed the whole time he is working ; whereas a workman performing several operations will have several sets of tools and while he is working with one set, the other sets of tools and capital invested in them will be lying idle.

V. *(Division of labour leads to increasing use of machinery.)*

Division of labour involves the division of the work of production into a number of simple and almost mechanical operations, many of which can be done by machines ; the result is that *machinery comes to be substituted for human labour to an increasing extent*, and this leads to greater efficiency of production.

VI. *(Division of labour favours the progress of invention.)*

The industrial process being divided under this system and being split up into several simple operations, it is easy for inventors to see as regards each operation where an improvement is possible and in this way inventions are facilitated.

Again the workman performing only a single operation often finds out ways in which his instruments can be improved—indeed a large proportion of modern inventions of machinery,* etc., has been made by workmen.

Adam Smith on Division of Labour.

On the subject of division of labour, Adam Smith's well-known remarks are quoted below. "This great increase in the quantity of work, which in consequence of the division of labour, the same number of people are capable of performing, is owing to three different circumstances; first, to the increase of dexterity in every particular workman; secondly to the saving of the time which is commonly lost in passing from one species of work to another; and lastly to the invention of a great number of machines which facilitate and abridge labour, and enable one man to do the work of many." (*The Wealth of Nations*, Bk. I., Ch. I).

The gain in adaptation from division of labour is not mentioned by Adam Smith. It is noticed by Babbage and Mill (Mill's *Principles*, Bk. I., Ch. VIII).

†Disadvantages of Division of Labour.

Economic writers point out certain disadvantages attaching to division of labour; and some of these disadvantages are of a serious character.

* Hobson points out that history refutes the heroic theory of invention—that of an idea flashing suddenly from the brain of a single genius and effecting a rapid revolution in a trade. "The present spinning machinery which we now use is supposed to be a compound of about eight hundred inventions. The present carding machinery is a compound of about sixty patents."

†Disadvantages of Division of Labour.

Adam Smith (*The Wealth of Nations*, Book V., Chapter I.) remarks "The understandings of the greater part of men are of necessity formed by their ordinary employments. The man whose whole life is spent in performing a few simple operations.....has no occasion to exert his understanding.....He generally becomes as stupid and ignorant as it is possible for a human creature to become.....His dexterity at his own particular trade seems in this manner to be acquired at the expense of his intellectual, social and martial virtues"—and for preventing this deterioration of the mass of the people by division of labour, Adam Smith rightly recommends education of the people by the state.

The socialist thinker, Karl Marx, is even more emphatic on this point. He declares "Some crippling of body and mind is inseparable

I. *The workman often reduced to the level of a machine.*

The development of the character and capacity of the workman is hampered by extreme specialization. Present-day division of labour involves extreme specialization of work ; and specialization is narrowing. A man performs the same simple operation all day long and tends to have his mental outlook narrowed ; he becomes almost a machine.

(As against this objection, it may be pointed out that the use of machinery in a factory makes the labour of the worker less exhausting from the physical point of view and also perhaps less stupefying generally than in the ordinary handicrafts where work is much less specialized. The hours of work in a factory are limited. This gives the workers leisure for enlarging their intellectual and artistic outlook ; and the large opportunities for social intercourse and interchange of ideas among the intelligent high grade labourers in the factory may prevent any narrowing effect which specialization might otherwise have produced).

Education of the labourers is a suitable and powerful influence for checking the narrowing effects of division of labour.

II. *Unemployment.*

(a) *Partial displacement of men by women and children.*

The labour of women and children is generally cheaper to the employer than the labour of men ; and it has been pointed out that division of labour by simplifying operations and making tasks easy has to some extent made possible the replacement of men by women and children. Many men have been thus deprived of their employment.)

even from division of labour in society as a whole. Since, however, manufacture carries this social separation of branches of labour much further, and also, by its peculiar division, attacks the individual at the very roots of his life, it is the first to afford the materials for, and to give a start to, industrial pathology.

Division of labour in the capitalist workshop converts the labourer into a crippled monstrosity, by forcing his detail dexterity at the expense of a world of productive capabilities and instincts.

.....it (i.e. division of labour in the capitalist workshop) *adapts the detail operations to the various degrees of maturity, strength, and development of the living instruments of labour, thus conducing to the exploitation of women and children.*

—Karl Marx, *Capital*.

(b) *The extreme dependence of the individual workman upon one sort of work also increases the danger of unemployment.*

Division of labour makes each workman specialize in one operation, and he often becomes incapable of doing any sort of work beyond the kind which he is accustomed to do. And if the demand for a particular sort of work done by that workman falls off on account of any reason (*e.g.* a change in fashion or some new inventions), then the workman becomes absolutely helpless as he cannot do other sorts of work.

(Marshall however points out that modern machinery by increasing the demand for general intelligence and by weakening the barrier between different trades is making it comparatively easy for a workman to pass from one trade to another; modern machinery is thus lessening the evil of the excessive dependence of the worker upon the sort of work usually done by him. This is a gain of very great value, one of high significance in relation to the future of the working classes).

Conclusion.

Division of labour (as already noted) has conferred very great benefits on society, it is of fundamental importance in improving the efficiency of production in a country. The system of division of labour may be abused by the capitalist and employing classes for the exploitation of labour and then it has serious disadvantages relating to (a) the degradation of the labourer to the level of a machine, (b) the exploitation of women and children and (c) also unemployment.

We must always remember that *the system is for man and not man for the system—the system of division of labour should be so used as to secure the maximum welfare of the people of the country as a whole*; worker's co-operative organisations for production under conditions economically sound will be of great help in this direction; and even under the modern capitalistic system, labourers working under capitalist employers may escape to an important extent from the dangers of degradation to the level of a machine by education which will develop their moral and intellectual faculties. *Ample provision for education (general and also technical) is the best remedy*

against any narrowing and degrading effect of division of labour and it is also the best insurance against unemployment and the greatest guarantee for national industrial development.)

***A brief history of the Organization of Labour.**

(i) First stage—division of labour according to sex.

The earliest form of division of labour is *division of labour according to sex*. In primitive societies, man performs what he regards to be the higher forms of work, e.g. fighting, hunting, leaving to woman the drudgery of the household and also in some cases the labour of cultivating the land.

* "If we keep labour alone in view, we may designate the *separation of social production into its main divisions or genera—viz. agriculture, industries, etc., as division of labour in general, and the splitting up of these families into species and sub-species, as division of labour in particular, and the division of labour within the workshop as division of labour in singular or in detail.*

"While division of labour* in society at large, whether such division be brought about or not by exchange of commodities, is common to economical formations of society, *the most diverse division of labour in the workshop, as practised by manufacture, is a special creation of the capitalist mode of production alone.*"

Marx contrasts—

(1) society with capitalist production and having anarchy in the social division of labour and despotism in the workshop;

(2) and earlier forms of society in which the separation of trades is spontaneously developed;

and in connection with these earlier forms of society, Marx refers sympathetically to the old village communities of India and the division of labour in them under which the worker worked independently for himself and not for a capitalist master. "These small and extremely ancient, Indian communities, some of which have continued down to this day, are based on possession in common of the land, on the blending of agriculture and handicrafts, and on an *unalterable division of labour*, which serves, whenever a new community is started, as a plan and scheme ready-cut and dried.....The constitution of these communities varies in different parts of India. In those of the simplest form, the land is tilled in common and the produce is divided among the members. At the same time spinning and weaving are carried on in each family as subsidiary industries. Side by side with the masses thus occupied with one and the same work, we find the chief inhabitant who is judge, police and tax-gatherer in one; the book-keeper (or village accountant), a smith and carpenter, who make and repair all the agricultural implements; the potter who makes all the pottery of the village, the barber, the washerman who washes clothes, the silversmith, here and there the poet,.....in others the schoolmaster.

(ii) Second stage—differentiation into separate trades.

The earliest advance is made when division of labour takes the form of *differentiation into separate trades*. A man at this stage ceases to produce by his own labour all things he requires, the different things required by a man are now produced by many men engaged in different trades, e.g. the trades of the weaver, the fisherman, the smith, the carpenter and so on.

The caste system in countries where it prevails develops in connection with this stage in the history of division of labour. Under the guild system, the differentiation into trades is carried to a very great length.

(iii) Third stage—the manufacturing system and the establishment of factory industries.

Under this system, the work done by labour as regards the production of any commodity (a pin, a needle, etc.) is split up into a number of simple operations, each operation being performed by a separate worker, e.g. the manufacture of pins under the factory system and machine production is divided into 18 or more distinct processes, each done by a worker in that process and who does nothing else.

In a factory the manufacture of a boot or a watch is divided into fifty or hundred operations each operation being performed by a separate workman.

(iv) Fourth stage—the so-called territorial or international division of labour.

With the development of transport facilities and the consequent development of international trade, division of labour is becoming international in the sense that each nation is devoting itself more and more to the production of commodities for which it is best suited by its climate, the industrial aptitudes of its people and its natural resources. England produces coal and cotton goods, Australia produces wool, India jute, cotton, tea, oil seeds, France silk and wine, etc.

Prof. Gide is of opinion that the expression 'division of labour' should be applied strictly to the third case, i.e. the division of labour in a factory.

".....The whole mechanism discloses a systematic division of labour; "The law that regulates the division of labour in the community acts with the irresistible authority of a law of Nature, at the same time that each individual artificer, the smith, the carpenter and so on, conducts in his workshop all the operations of his handicraft in the traditional way, but independently and without recognising any authority over him. The simplicity of the organisation for production in these self-sufficing communities.....this simplicity supplies the key to the secret of the unchangeableness of Asiatic societies, an unchangeableness in such striking contrast with the constant dissolution and refounding of Asiatic states and the never-ceasing changes of dynasty. The structure of the economic elements of society remains untouched by the storm-clouds of the political sky." Karl Marx—*Capital*.

It would be better to call differentiation into separate trades *specialisation of labour* rather than division of labour; and the so-called international division of labour is really the *localization of labour and industry* and nothing else.

Simple and Complex Division of Labour.

Some economic writers distinguish between—

(a) *Simple division of labour, i.e. the division of occupations.*

We have this in the different occupations of a society, *e.g.* the occupation of the smith, that of the shoemaker, the carpenter, the mason, the doctor, the lawyer, etc. Here each workman carries through the whole of one of the stages in production.

It may be generally pointed out that the chief advantages resulting from division of labour in the sense of division of occupations are—

- (i) Adaptation to aptitude.
- (ii) Continuity.
- (iii) Dexterity.

(b) *Complex division of labour (or division of labour proper) involving the subdivision of occupations.*

The subdivision of the work of the shoemaker into fifty or hundred operations performed in a factory by distinct sets of workmen is a good illustration of this.

The difference between the simple and more complex division of labour is essentially one of degree.

Geographical Division of Labour (Localization of Industry.)

Geographical division of labour results from the strong tendency towards developing an industry in that place where the natural advantages for that industry are the greatest. England imports food and raw materials from countries which have greater natural advantages for producing these things than England; and exports manufactures for which she has greater aptitudes and advantages. Within the same country again, one industry is localized in one locality, another industry is localized in another locality and so on; and this is called territorial division of labour or localization of industry.

The gains from the geographical division of labour are chiefly of two kinds:

(i) In part they arise from the *adaptation of different parts of the world to the production of different articles*. The tropical countries are adapted for the production of tropical products like coffee, spices, tropical fruits etc. and the temperate countries are specially suitable for producing wheat and other kinds of corn etc.

(ii) And in part from the increased efficiency which is the result of exclusive application to one task.

The subject of localization of industry is more fully discussed in the next chapter.

INDUSTRIAL ORGANIZATION. MACHINERY AND DIVISION OF LABOUR.

Summary.

Industrial organization increases industrial efficiency.

The problems of industrial organization relate chiefly to (1) machinery and division of labour, (2) geographical division of labour and localization of industry, (3) large-scale and small-scale production, and (4) control of business.

Machinery.

The modern system is essentially the system of machine industry.

(A) Efficiency of production.

Machinery has immensely increased the efficiency of production in almost all modern industries (i) in heavy arduous tasks, (ii) in delicate kinds of work, (iii) by working faster than man and (iv) by working more accurately than man. The system of interchangeable parts in machinery has increased the use of machines and thus the efficiency of production.

(B) The quality and condition of labour.

Machinery increases (i) the demand for general intelligence and character in some respects, (ii) reduces the strain on the muscles of the labourers, (iii) often diminishes their monotony of life, (iv) often reduces their monotony of work and (v) has in some respects diminished the barriers between different industries.

Division of Labour.

Division of Labour is perfected with the development of industrial organization; and it is more and more adjusted to the growing specialization of machinery.

Advantages.

Division of labour increases the efficiency of production through (i) a gain in adaptation, (ii) a gain in skill, (iii) a gain or saving in time, (iv) economy of implements and capital, (v) the stimulus given to invention and (vi) the increasing use of machinery.

Disadvantages.

Extreme specialization of labour (a) often reduces the workman to the level of a machine and (b) increases the danger of unemployment—and the remedy is universal education.

QUESTIONS.

1. Indicate after Herbert Spencer the relation between organization and efficiency.

What are the chief problems of industrial organization?

2. Define a machine. Point out the respective provinces of manual labour and machinery.

3. Give a brief summary of the influence of machinery in modern industries. (A. U. 1897).

4. (a) Discuss the influence exerted by the introduction of machines on the efficiency of production as well as on the quality of human life. Illustrate your remarks with special reference to Indian Factory Labour. (A. U. 1908).

or

Examine the industrial effects of the growth of machinery explaining how it has affected the social and economic condition of the working classes. (C. U. 1911).

Examine the effects of machinery on labour, and discuss whether the progress of mechanical invention is injurious to the labouring classes. (C. U. 1920).

5. (a) What is Division of Labour? What are the conditions for its existence and expansion?

(b) Examine the advantages of Division of Labour. Weigh against them the disadvantages if any. (A. U. 1899, C. U. 1916).

6. Write notes on :—

Simple and complex division of labour; and geographical division of labour.

CHAPTER VII.

INDUSTRIAL ORGANIZATION (continued).

Localization of Industries.

What is Localization ?

The concentration of a particular industry in a particular region is known as the Localization of Industry. (It is also often called Territorial Division of labour).

If many firms engaged in one industry are situated in one locality, the industry is said to be localized in that place. Here in India as regards modern large-scale manufactures we have the jute-manufacturing industry localized on both banks of the Ganges near Calcutta, the cotton-manufacturing industry localized largely in Bombay, the large-scale manufacture of iron and steel by the Bengal Iron and Steel Company at Kulti and the Tata Iron and Steel Company in Jamshedpur, both near the Bengal coal area and so on ; and as some examples among the old handicrafts of India, we may mention the localization of the muslin industry in Dacca, ivory-carving in Murshidabad and elsewhere, shawl-making in Kashmir, etc.

Some prominent instances of localization in other countries are the meat-packing industry in Chicago, the cotton-manufacturing industry in Lancashire, the cutlery trade in Sheffield, Yorkshire, etc.

Localization and Industrial Development.

In primitive societies, there is little or no localization. As industrial development goes on, localization becomes more and more thorough and complete. The perfecting of the industrial organisation depends upon increasing specialization—specialization of labour, specialization of machinery and local specialization in industry (i.e. the establishment of industries in places specially suited to them).

With an imperfectly organized industrial system as in India at present and in England of the 18th century, there is localization but it is comparatively imperfect and incomplete. Mr. Hobson* points out in connection with 18th century England "The staple industries, tillage, stock-raising and those connected with the supply of the common articles of clothing, furniture, fuel and other necessities were spread over the whole country"—on the whole, there was far less local specialization in industry than we find to-day in England and the United States.

* Hobson—*The Evolution of Modern Capitalism.*

Causes and conditions of Localization.

The localization of an industry in a particular place is due to one or more of the following causes :

I. Natural causes.

Industrial specialization is brought about to some extent by *physical conditions*, e.g. *climate, the character of the soil, the vegetation it produces, and its mineral wealth*, presence of water-power, etc. The production of a mineral obviously tends to be localized in a place where it is most abundant and can be easily extracted. The jute-manufacturing industry is localized in Bengal largely because Bengal has got a monopoly of the raw material (jute). Again the climate of certain regions is an aid to certain industries, and such industries will have a tendency to be worked in such a climate.

The physical conditions are important, sometimes all important ; but there are also other causes.

I. Other causes, economic, political etc.

(1) Economic conditions.

(a) *Accessibility to market.* Localization is also influenced to an important extent by the factor of accessibility to markets. An industry gains by being localized in a place from which the markets for the products of the industry are easily accessible on account of transportation facilities. Other things being equal, the greater the transportation facilities and the cheaper the cost of transport, the greater will be the tendency of the industry to localize itself in that place.

(b) Other conditions favourable to localization are (i) *availability of adequate supply of labour* (ii) *availability of adequate supply of capital for the industry*. Also suitable commercial conditions.

[Within recent times, the localization of industries has been greatly furthered in England and in India by the improvement of communications, and the increased mobility of labour and capital.]

(2) *Political causes.*

Political causes (e.g. deliberate encouragement by a national government, the patronage of kings and courts, etc.) often play a part in the establishment of localized industries. The cloth industry at Norwich was established under the protection of William the Conqueror; and many industries were established under the Plantagenet and Tudor Kings of England.

In India, not a few localized industries in different parts of the country owe their origin to the patronage of Hindu and Moslem princes and their courts.

III. *Inertia—the momentum of an early start.*

The first start often helps greatly. In certain cases an industry is concentrated and localized in a particular place for no other reason than that it was first started there. When once an industry is established on a large scale in a particular part of the country, each firm derives some important advantages from the existence of other firms already engaged in the same industry and in the same locality. And to secure these advantages new firms, when they are started, will tend to go to that locality.

The localization of an industry in a particular area is brought about by one or more of the causes indicated above. For example, the localization of the Indian jute-manufacturing industry on both banks of the Ganges near Calcutta is due largely to the fact that the raw material (raw jute) is abundantly found in Bengal and is in fact the monopoly of Bengal; and this localization is helped by other causes like a good supply of coal near at hand for the Jute Mills, and facilities of transport by rail and steamer for raw material and manufactured product in the neighbourhood of Calcutta. The Cotton Mills are located mostly in Bombay because of the abundant supply of the raw material (cotton) grown in neighbouring localities; but Bombay is at a disadvantage as compared with Calcutta as regards coal. The Tata Iron and Steel Company is at Sakchi and the Bengal Iron and Steel Company at Kulti because in this way they are both conveniently situated as regards iron ore and also fuel, being near the Bengal coal area.

Industries not suitable for Localization.

When an industry is localized, production is on a large scale ; and so the demand for the commodity must be fairly steady, the market large, and easily reached with good transport facilities. It is clear that industries producing commodities which are extremely perishable, or which cannot be profitably carried to a considerable distance for their bulk, or which have their market restricted in other ways (e.g. on account of highly unsteady or limited demands)—these industries are not capable of a high degree of localization.

Advantages of Localized Industries.

When a particular industry has once selected a locality for itself and has established itself on a considerable scale it generally remains there for a long time ; and this it does because of the numerous advantages springing from the localization of an industry in a particular area.

1. *Reputation.* The commodities of a particular town or district acquire a reputation which secures for them a good market and good price. Examples are to be found in Dacca muslin and Sheffield cutlery.

2. *Advantages relating to labour.* A localized industry also secures a very important advantage from the fact that it offers a large market for different kinds of skill. This is very helpful both to employers and also to workmen. Workmen know that if they go to such a place they will be able to get a good market for their skill, because there are many employers engaged in the industry in that place. Employers also will congregate in such a place because there they will find an abundant supply of workmen possessing that particular sort of skill which they may happen to want.

The localization of industries further secures the advantage of *hereditary skill* as the children of the workers engaged in that industry learn the trade unconsciously and even from their childhood. The children see their fathers working and

talking about their work ; and they learn their father's work quickly, without trouble and without effort.

3. *Advantage relating to capital and finance.* Many firms engaged in the same industry and localized in the same town or district also find it easy to secure sufficient supplies of capital because of the development of appropriate banking organizations, etc., in the locality.

4. *Economies from specialized machinery.* The use of specialized machinery can be developed to a very great extent and large economies resulting therefrom can be realized in connection with a localized industry. For example, an industry subsidiary to the localized industry, devoting itself to one small branch of the process of production and working for a large number of firms engaged in the main industry will be able to get a large volume of work ; and so it will be able to afford the use of highly specialized machinery for that particular small branch of production which it has taken up.

5. *Help from (a) subsidiary and (b) supplementary industries.*

(a) Another advantage consists in the growth of trades subsidiary to the main industry localized in that place ; and these *subsidiary trades* help the main industry by supplying it with materials, tools, machinery, and furnishing it with means of conveyance and communication (e.g. railways, etc.).

(b) *Supplementary industries.*

When an industry is localized in a particular area, often there come into existence supplementary industries. Cotton Mills have been sometimes established deliberately to provide employment for women and children as a supplementary industry near Iron Mills.

Such supplementary industries help the main industry localized in the place as regards the labour supply, etc. The Cotton Mills provide suitable employment and wages for women and children who cannot do the heavy work in the Iron Mills, and the men are employed in the heavy, arduous work of the Iron Mills. In the absence of a supplementary industry like the Cotton Mills, the women and children of the workers

engaged in the Iron Mills would have remained unemployed reducing the total income of the average labourer's family and creating difficulties as regards the labour supply for the Iron Mills.

6. *New ideas about inventions of machinery, organization, etc.* In a place containing many firms engaged in one particular industry, all sorts of inventions and improvements in machinery, in the processes of manufacture and general organization of business relating to that particular industry have their good points promptly discussed and scrutinised; and when a new idea is suggested by one man it is developed and perfected by other men and it also becomes the germ of other new and fruitful ideas.

Some Disadvantages of Localization and Remedies.

(1) *A localized industry suffers from disadvantages as a market for labour if the work done in it is chiefly of one kind,*

Excessive localization may make cost of labour high to the employer and average money earnings of each labourer's family low even in normal times.

e.g. if the work is such that it can be done only by strong men. It is pointed out that in those iron districts in which there are no textile or other factories to give employment to women and children, the work is such that only strong men can do it and the

result is that wages for these strong workmen are high and

(a) the cost of labour dear to the employer

(b) while as there is no work in the Iron Mills for the women and children of the labourer's family, the average money earnings of each labouring family are low.

So both employers and workmen suffer where there is a too exclusive demand chiefly for one kind of labour.

The obvious remedy is to establish in the same neighbourhood industries (e.g., Cotton Mills) of a supplementary character which will be able to provide work for other kinds of labour, e.g. women and children.

Remedy—supplementary industries.

(In some of the English manufacturing towns, the advantages of localized industries are combined with the advantages

of variety of employment ; and this has made them flourish greatly. *The deliberate starting of a supplementary industry to help another industry has, so far, not yet been attempted in India ; but this has been sometimes done in England).*

(2) Another disadvantage is this. An industrial district which is dependent chiefly on one industry localized there suffers severely when there is a great diminution in the demand for its products or when the supply of its raw material is not adequate, etc.

Excessive localization may lead to great sufferings during the depression of the single industry.

Remedy—different industries in the locality mitigating each other's depression.

If in such a district there are some other industries and if one of them suffers from depression, the other industries will be able to help the depressed industry in different ways 'mostly indirect' (Marshall).

Conclusion.

So localization of an industry in a place should not be carried too far—there should be some other industries in the neighbourhood (supplementary industries and other industries) to give variety of employment to labour in ordinary times and also to mitigate each other's depression during times of dull trade. This is necessary in the interest of the labourers and also of the employers.

External and Internal economies.

With improving industrial organization, the external and internal economies of a business are increased.

The external economies are those which all firms engaged in one industry can share ; these economies depend upon the general development of the industry in which these are engaged, the general development resulting either from the localization of industry (as described in this chapter), from facilities for marketing and transport and other things.

"The internal economies of a particular firm are those pecu-

liar to it ; these economies depend upon the internal organization of that particular firm and they result from the efficiency with which it is managed. For example, the economies of large-scale production are mostly internal economies, and these are described in the next chapter.

Summary.

1. With growing industrial development, localization becomes more thorough and complete.

2. Causes of Localization.

The localization of an industry in a particular place is due to one or more of the following causes :

(A) NATURAL CAUSES—climate, vegetation, mineral wealth of the place, etc.

(B) Economic, political and other causes.

(i) Economic causes—accessibility to markets, adequate supply of labour, adequate supply of capital, etc.

(ii) Political causes—encouragement by kings, courts and national governments.

(iii) Inertia—the advantage of an early start.

3. Advantages.

A localized industry enjoys substantial advantages in connection with (a) labour, (b) the use of specialized machinery, (c) subsidiary and supplementary industries and (d) also the quick development of new ideas relating to the industry. The reputation of a particular locality for a particular commodity helps the sale.

Questions.

1. What is Localization?

Give examples of industries not suitable for localization.

2. What are the circumstances which favour the localization of industries and what are the advantages resulting therefrom? (C. U. 1912; A. U. 1904, 1905, 1908, 1909).

What are the factors leading to localization of industry? What are the advantages of such localization? In what industry is localization impossible and why? (C. U. 1917).

State the causes leading to the localization of different industries. Illustrate some of the consequences of such localization by reference to Indian industries. (C. U. 1921).

CHAPTER VIII.

INDUSTRIAL ORGANIZATION (continued).

Production on a Large Scale. Production on a Small Scale.

Large-scale Production.

(*Large-scale production refers to the production of a commodity on a large scale ; and it involves the use of a large amount of capital, and numerous labourers under the same management. A jute mill or a cotton mill is a case of large-scale production, while an example of small-scale production is the village weaver weaving a few yards of cloth on his handloom in the course of a whole day.*) The railway transports goods and passengers on a large scale and is an example of large-scale business : but our indigenous bullock cart is an example of small-scale business.

(*Since the Industrial Revolution in Europe, the tendency to large-scale production has been making itself more and more prominent in all civilized countries—it has made great progress in Britain, France, Germany and the progress is greatest in the United States of America ; it has made substantial progress in Japan ; and even in India it has made some progress, the railways, steamship companies, the jute and cotton mills, the large modern mining industries being examples of large-scale production, and the Tata Iron and Steel Company with its capital of several crores and employing many thousands of labourers is a notable Indian example of large-scale production.*) (We must note however that in India even now, the total number of labourers employed in large-scale production is much smaller than the total number of labourers employed in small-scale production in small workshops in the towns and villages and in cottage industries like village pottery, metal-working, handloom weaving, etc. So in India small-scale production is still the general rule, and large-scale production is still much less prevalent than small-scale production).

(The conditions of the growth of large-scale production are to be found chiefly in the immense change in industrial conditions during the last century and a half.

Conditions and causes of the modern tendency to large-scale production.

Increasing division of labour and increasing use of machinery have made the great growth of large-scale production possible and economical; and a necessary condition of large-scale production is the expansion of the market for products, this expansion being brought about by advances in transportation facilities, viz., development of roads, railways, steamships, etc.—if there was no large market, obviously there would be no large-scale production to supply that market. Lancashire in England produces cotton piece-goods on a large-scale because it supplies not only England, but also China and India, etc., and has in fact a world market.

Large-scale production is economical to the producer—he is able to produce the same quantity of a commodity at less cost under the large-scale system than under the small-scale system.) The great advantages which large-scale production offers to business men and producers, easily explain the present tendency to concentration of industry. (Large-scale production also often benefits consumers by reducing prices, and it sometimes secures higher wages and better conditions of work to the worker than a small-scale industry managed by small-scale entrepreneurs.)

Economies of Large-scale Production in transport (viz. railways etc.), mining, manufactures, etc.

(Advantages of Large-scale Production to the producers and to society.)

It has been seen already that large-scale production often results in substantial advantages for (1) consumers and (2) sometimes for workmen.

Now we shall consider the gains of the producers and of the community from production on a large scale. These gains can be conveniently divided into two classes: (1) economies of productive power, and (2) economies of competitive power.

I. Economies of productive power from Large-scale Production.

These increase the efficiency of production in such a way as to benefit (a) the producers of a particular firm and (b) at the same time also other producers and the community as a whole.

1. Economies from Division of Labour.

(A producer on a large scale is able to introduce more thorough and systematic division of labour of all kinds (e.g. manual labour, clerical and other non-manual work, superintendence and management) than the producer on a small scale ; and thus he secures important advantages.

(i) For example, a large establishment can employ a large number of highly skilled men, and because of the great volume of work it can keep each of its highly skilled employees constantly engaged in the most difficult work of which he is capable—it can command the services of highly talented and skilled men of different kinds, and it can place them in those departments of the business for which they are best qualified. A small-scale establishment cannot do this to the same extent and so is less efficient than a large-scale business.)

The advantages relating to specialized skill are very prominent in manufacturing and transporting industries which have several departments affording ample scope for a variety of different talents.

(ii) *The head of a large business after securing managers, clerks, foremen and labourers who are the right men for their work can leave much of the details of the business to them and can devote himself wholly to large questions of policy,—he can keep his full energies for the difficult and fundamental problems of the business. He will study the larger movements of the market, of demand and supply and how to meet a new demand or to create a new demand or to produce his supply more efficiently and cheaply by improving his organization.*

The head of a small establishment has to spend much of his time on the details of his business because he, unlike the large-

scale producer, has not many highly qualified subordinates ; and so he cannot devote himself so much to the larger problems.)

2. Economy of Machinery.

(i) *Up-to-date machinery.* Another advantage enjoyed by the head of a large business in certain industries is that he with his large funds can afford to purchase promptly and utilise always the *latest improvements in machinery*. The small producer cannot.

(ii) *Experiments.* A large-scale producer is also able to spend a large sum on experiments relating to new machines or new processes of production ; and a successful experiment often means an immense increase in the efficiency of production.)

Some of the great manufacturing establishments in the United States (e.g. the Carnegie Steel Co. of Pittsburg) derive their success in no small measure from their very large expenditure on industrial experiments and the prompt installation of the latest and the best machinery.

(iii) *Specialization of machinery.* A large establishment can afford to have many expensive machines, each made specially for one small use and has large economies from this specialization of machinery. And this it can do profitably because controlling a large volume of business it will be able to provide continuous employment for each of these machines. (But the small-scale producer must have many things done by hand or by imperfect machinery because with his small volume of business he will not be able to provide constant employment for expensive specialized machines ; and a man cannot afford to buy specialized machines when he is not able to provide continuous work for them).

(iv) A large establishment has its own carpenter's and mechanic's shops, etc. ; these shops diminish the costs of repair and they also have the important advantage of preventing delays from accidents to the machinery.

(v) *Economy of motive power.*

Again in a large business, there is often a great economy

of motive power. A large manufacturer with his more up-to-date machinery uses comparatively less coal (or other fuel) than the small producer.

Also his initial cost as regards installation of machinery per unit of horse power is less than that of the smaller manufacturer with his smaller types of machinery.

3. Economy of materials and products.

(i) *Utilisation of waste products.*

A large-scale producer is able to make better use of by-products than a small-scale producer. The small-scale producer doing a small volume of business has to throw away a number of small things which would be collected and utilised to good purpose by a large-scale producer. (In the mineral oil and meat-packing industries of the United States, large-scale production has made possible this utilisation of waste products to a marvellous extent).

(ii) *Economy of purchase and sale.*

A large business has generally many advantages in buying and selling over a small business.

(a) *Buying at cheap rates.* As regards buying, the head of a large business buys in large quantities and therefore he gets his things at cheap rates. He gets also low freight rates and makes economies in other ways as regards the cost of carriage of his goods.

(b) *Selling at good prices, and extensive sales.* As regards selling, a large business because it has a large and varied stock attracts customers and is thus able to get a good price for its products. The prestige attaching to a large business also helps it very considerably in securing for it a large number of customers and extensive sales.

4. Economy of space.

A large manufacturer is often able to make a more economical use of the land occupied by him for his factory than the small-scale producer. So he has to pay a smaller rent relatively to his own business.

